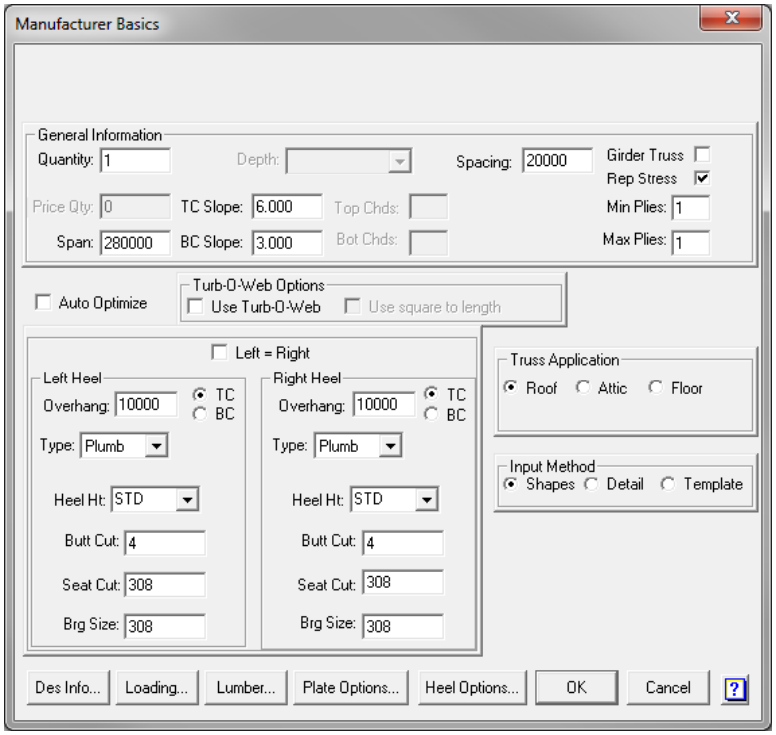

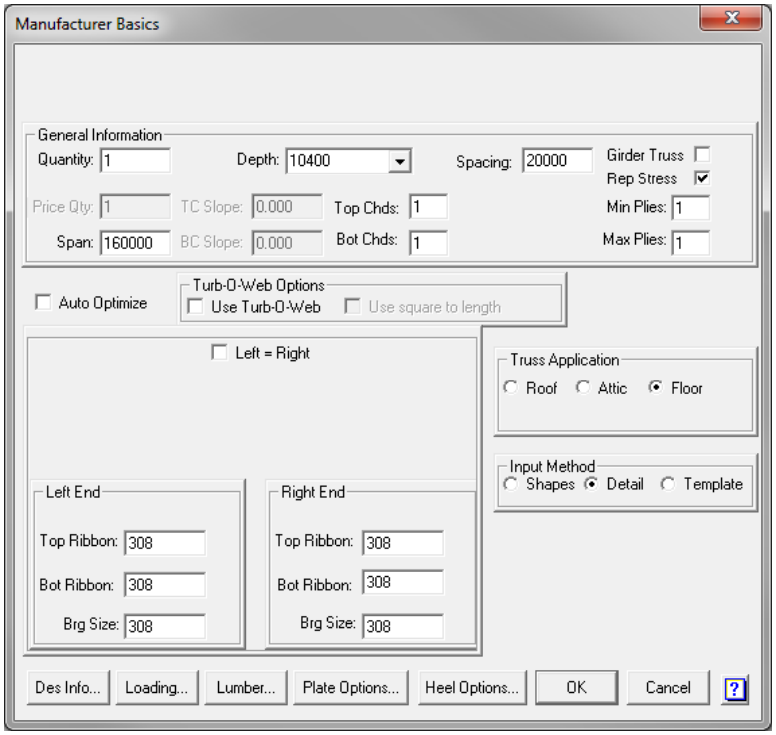

Engineering Manufacturer Defaults 7.35

May 2012

MiTek UNIVERSITY

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Basics

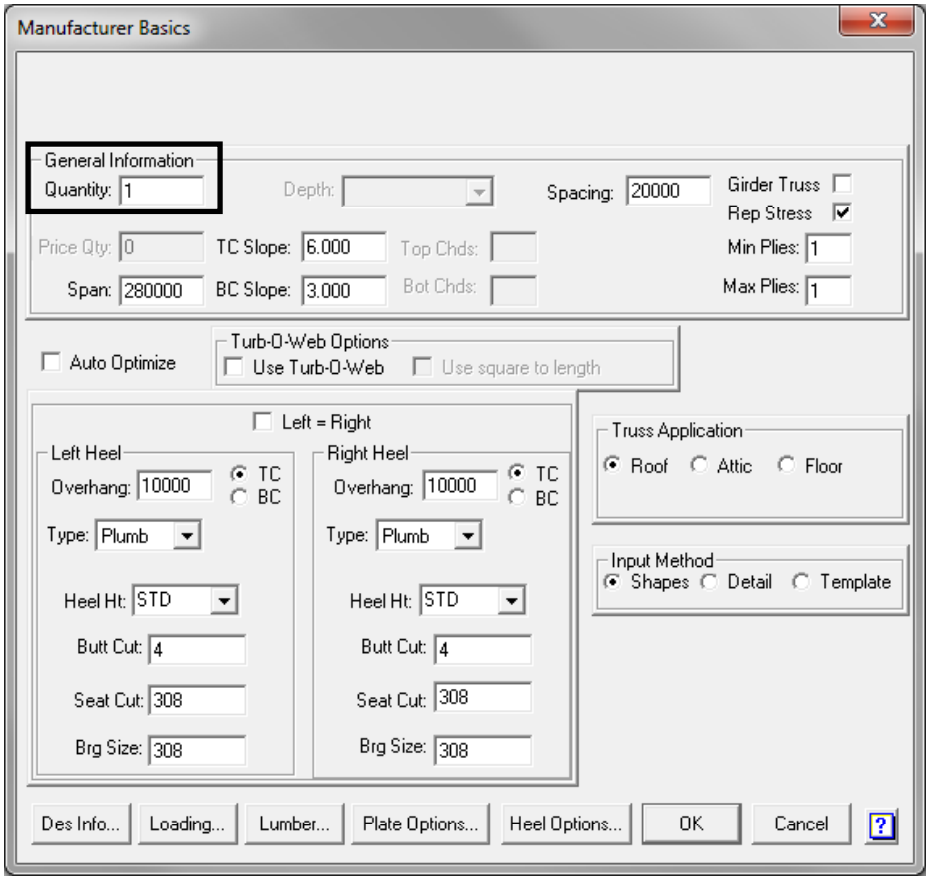
General Information

Quantity – How many of this truss will be built.

Price Qty – Because it costs less to build larger quantities of trusses, Price Quantity can be used to control pricing. Increasing the Price Qty number will reduce the price of trusses and the reverse is true for decreasing the Price Qty number.

NOTE: This does not affect the actual quantity of trusses.

To activate **Price Qty** – In **Setup > Manufacturer > Estimating > Roof** – click the **Bidding Method** button and check the **Activate Quantity for Price** check box. **Price Qty** will be activated on all three levels of Basics.



NOTE: All settings made within Manufacturer Basics will be the default information when starting a new job. All of this information may be modified at both the Job and Truss level

Basics

General Information (cont)

Span – The length of the bottom chord. The span will include cantilevers but not overhangs.

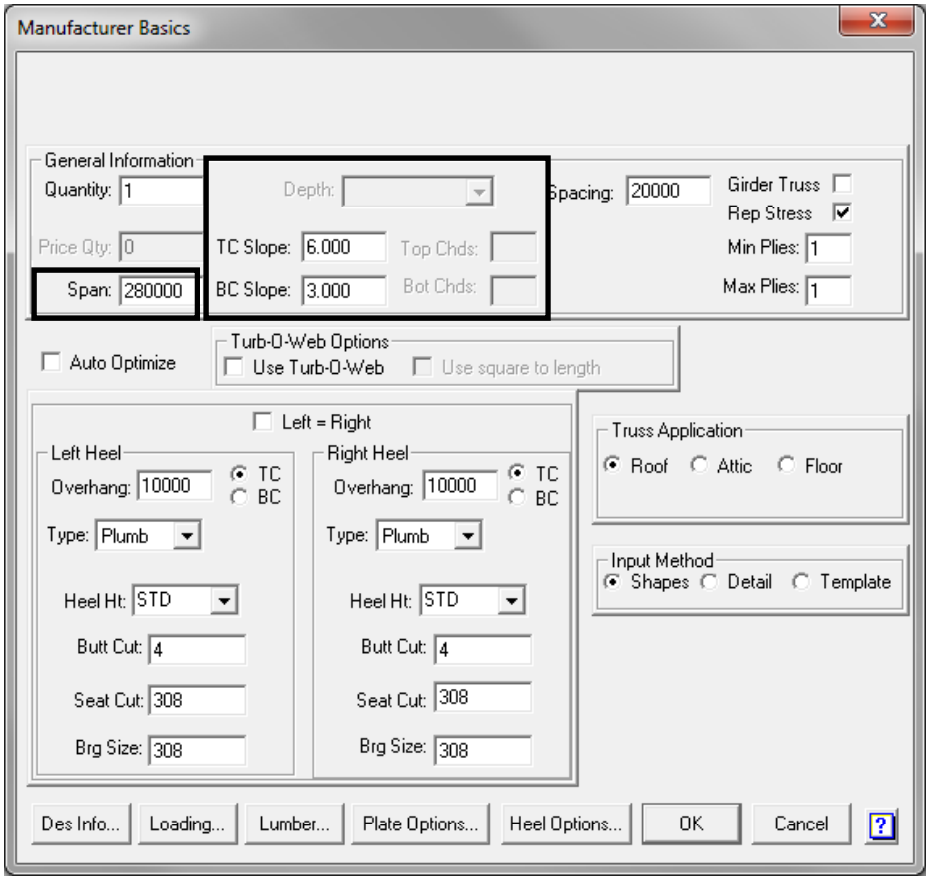
TC Slope – Top Chord Slope, is generally described as inches of rise per foot of run.

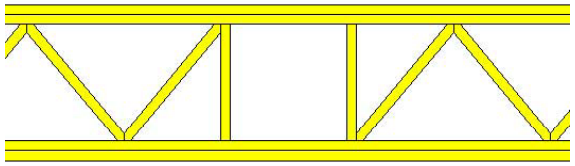
BC Slope – Bottom Chord Slope, is generally described as inches of rise per foot of run.

Depth – Enter floor truss depth here or select a Posi-Strut web size. This box will activate when the Floor radio button is clicked in Truss Application.

Top Chds - This specifies the number of Top Chords to be used when a stacked top chord is required.

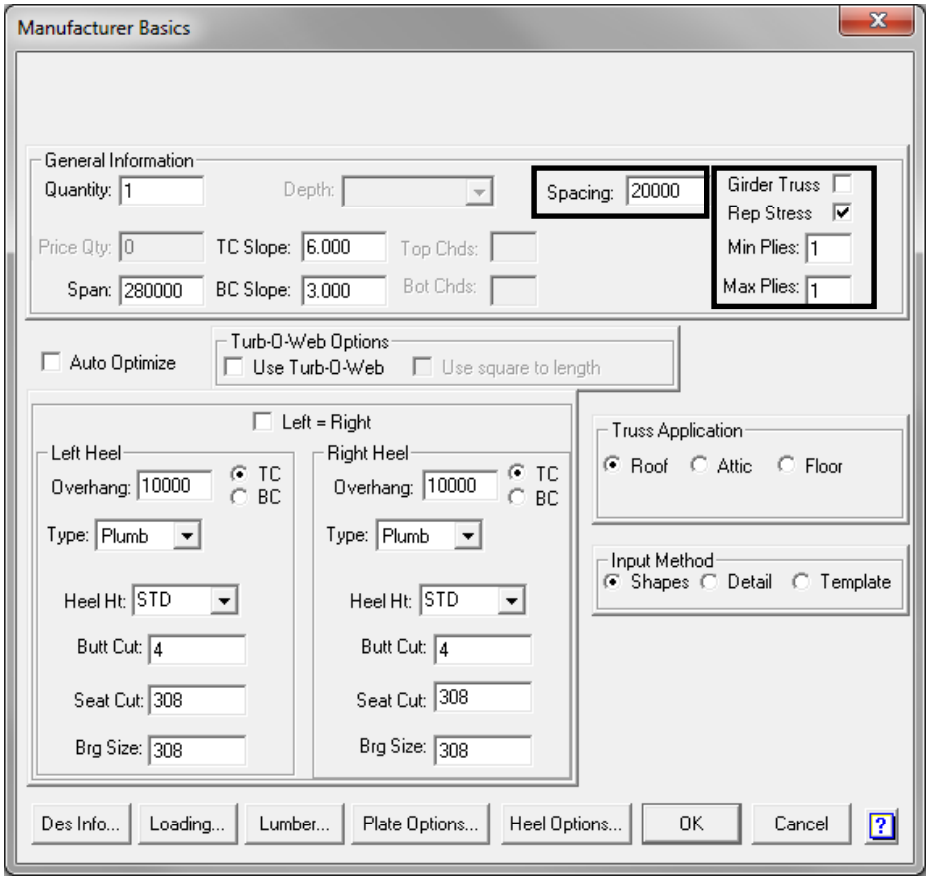
Bot Chds - This specifies the number of Bottom Chords to be used when a stacked bottom chord is required.





Basics

General Information (cont)



Spacing – The distance between trusses. Measured either from face to face or centerline to centerline of truss.

Girder Truss – This check box will activate Girder information.

NOTE: Girder information will be included with the Truss Application.

Rep Stress – Repetitive Stress **-** When checked, this tells the program that a minimum of three consecutive trusses have the exact same web pattern for lateral bracing. Loading on the center truss is supported by the other two trusses. Repetitive Stress can only be used with spacings of 2 ft or less, quantities of three or more consecutive trusses and girders with three or more plies.

Min Plies – Specify the minimum number of Plies to be considered for the design

Max Plies - Specify the maximum number of Plies to be considered for the design.

NOTE: The program will not use the maximum number of Plies if the design does not require them.

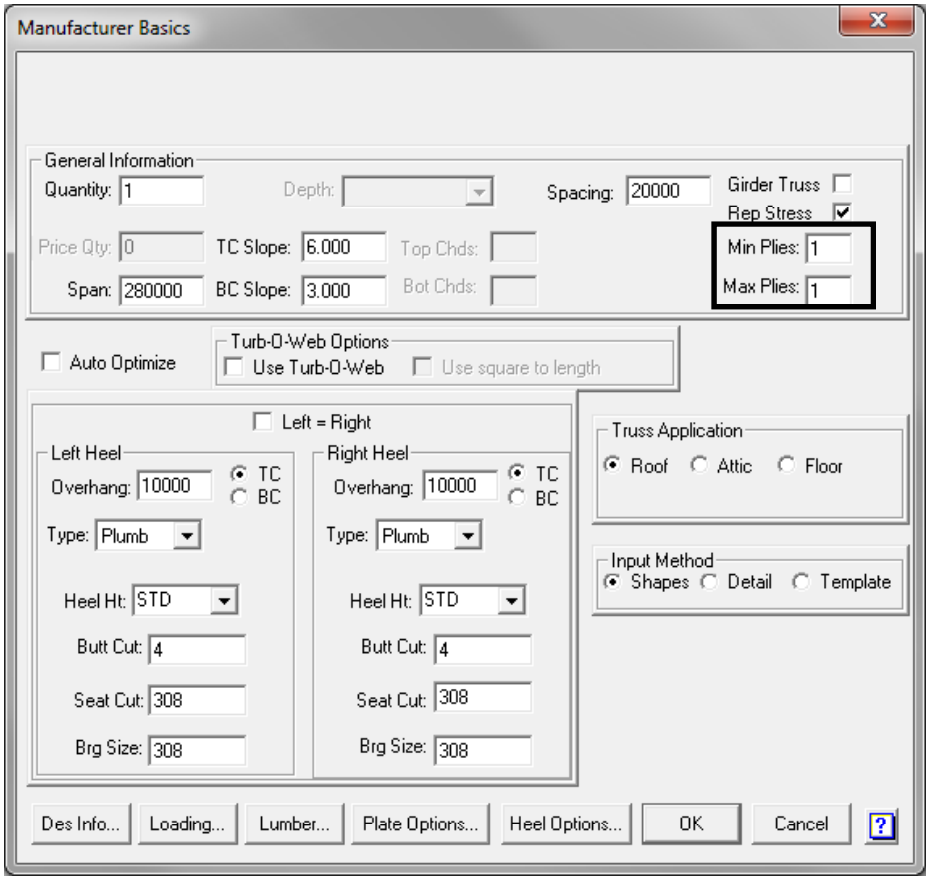
Basics

General Information (cont)

When both are set to 2, for example, the girder will be designed with 2 plies.

When **Min Plies** is set to 2 and **Max Plies** is set to 4, the program can determine the plies needed.

With loads applied and Min and Max set to 2 and 4, The program has the ability to increase plies, from 2 to 4, to pass analysis. Should the girder fail with 4 plies, changes must be made to chord material and web configurations to correct the problem.



Basics

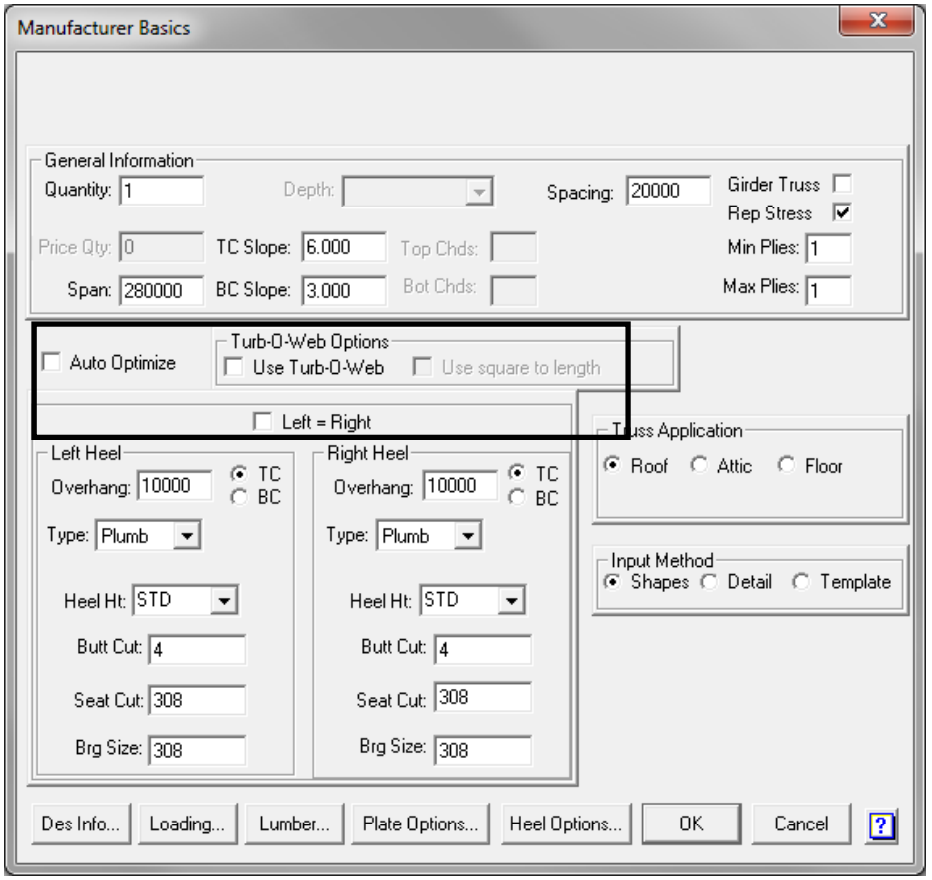
General Information (cont)

Auto Optimize – This option is unchecked by default. When checked, the program will optimize the truss immediately after a shape is selected.

This option will adjust as many webs as possible.

Turb –O-Web Options – This will be discussed in detail later.

Left = Right – When the left heel information is exactly the same as the right heel, this option will gray out the right heel options and use the left heel information for both.



Basics

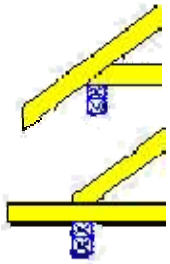
General Information (cont)

Left Heel:

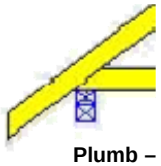
Overhang – The length of the overhang measured horizontally.

TC – Top Chord overhang

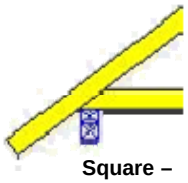
BC – Bottom Chord overhang



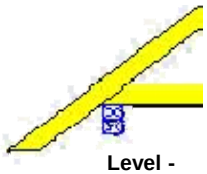
Type – This describes the end condition of the overhang and the available options are Plumb, Square and Level.



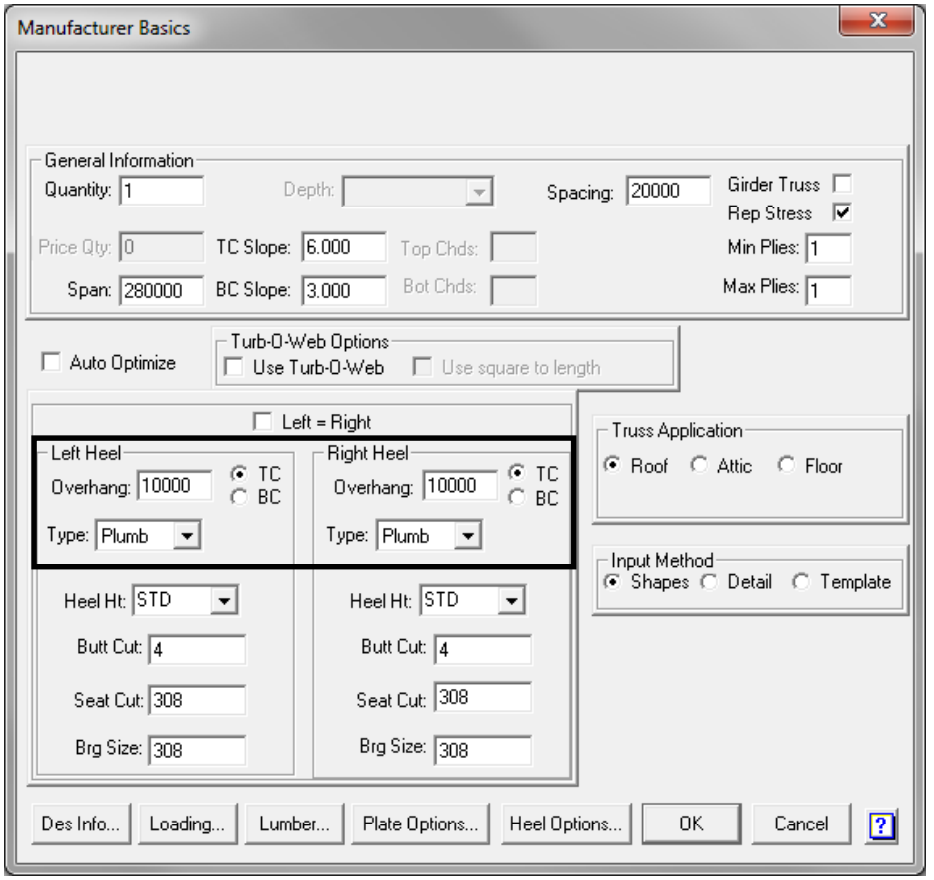
Plumb –



Square –



Level -



Basics

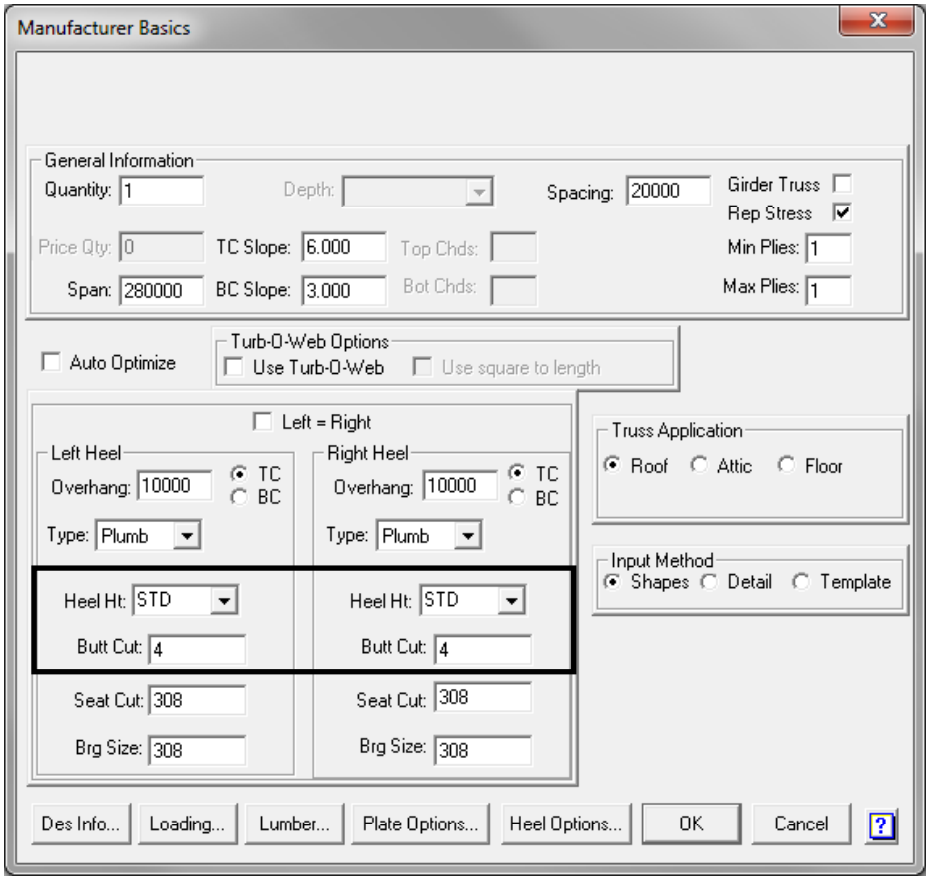
General Information (cont)

Heel Ht – This is the vertical height, at the end of the bottom chord, measured from the bottom edge of the bottom chord to the top edge of the top chord.

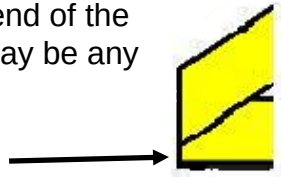
STD – Will calculate the heel ht using the butt cut and the depth of the top chord for the slope selected.

2X? – Will calculate the heel ht as described above. This option uses the depth of the 2X material selected but does not change the top chord material.

Manual Entry – This option is not listed but allows the user to enter a specific heel height dimension.



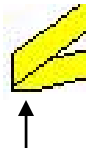
Butt Cut – This is the vertical cut at the end of the bottom chord and is generally a ¼" but may be any dimension required.



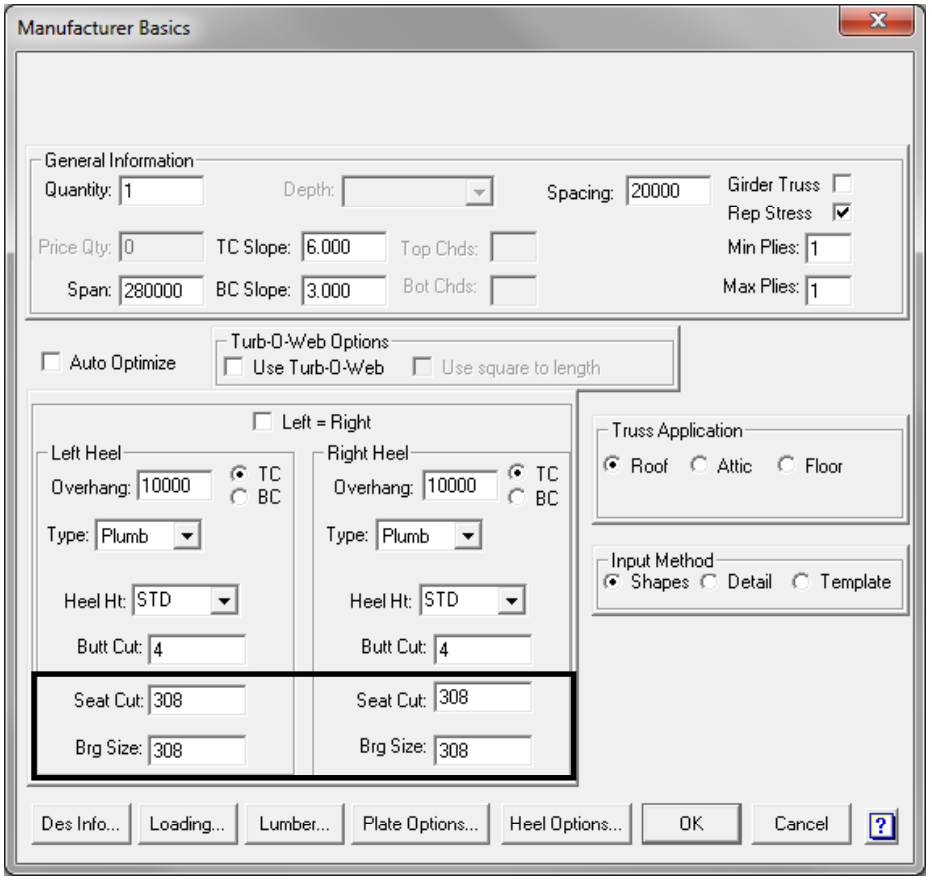
Basics

General Information (cont)

Seat Cut – The size of the horizontal bearing cut on a scissor bottom chord.



Brg Size – The horizontal dimension of the supporting wall.



Basics

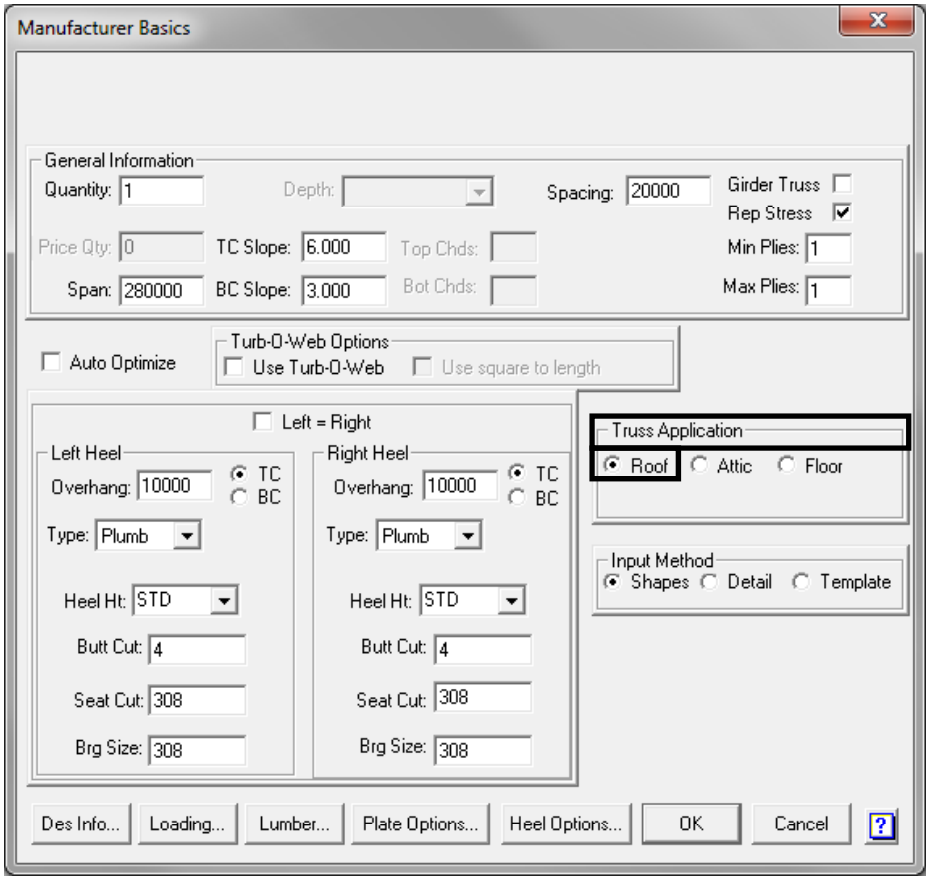
General Information (cont)

Truss Application - Roof:

When set to **Roof**, allows the user to specify all Basic window settings for roof trusses.

For roof trusses, all settings under **Des Info, Loading, Lumber, Plate Options** and **Heel Options** may be set as the starting point for upcoming designs.

All settings can be modified at the **Job Level** and the **Truss Level.**



Basics

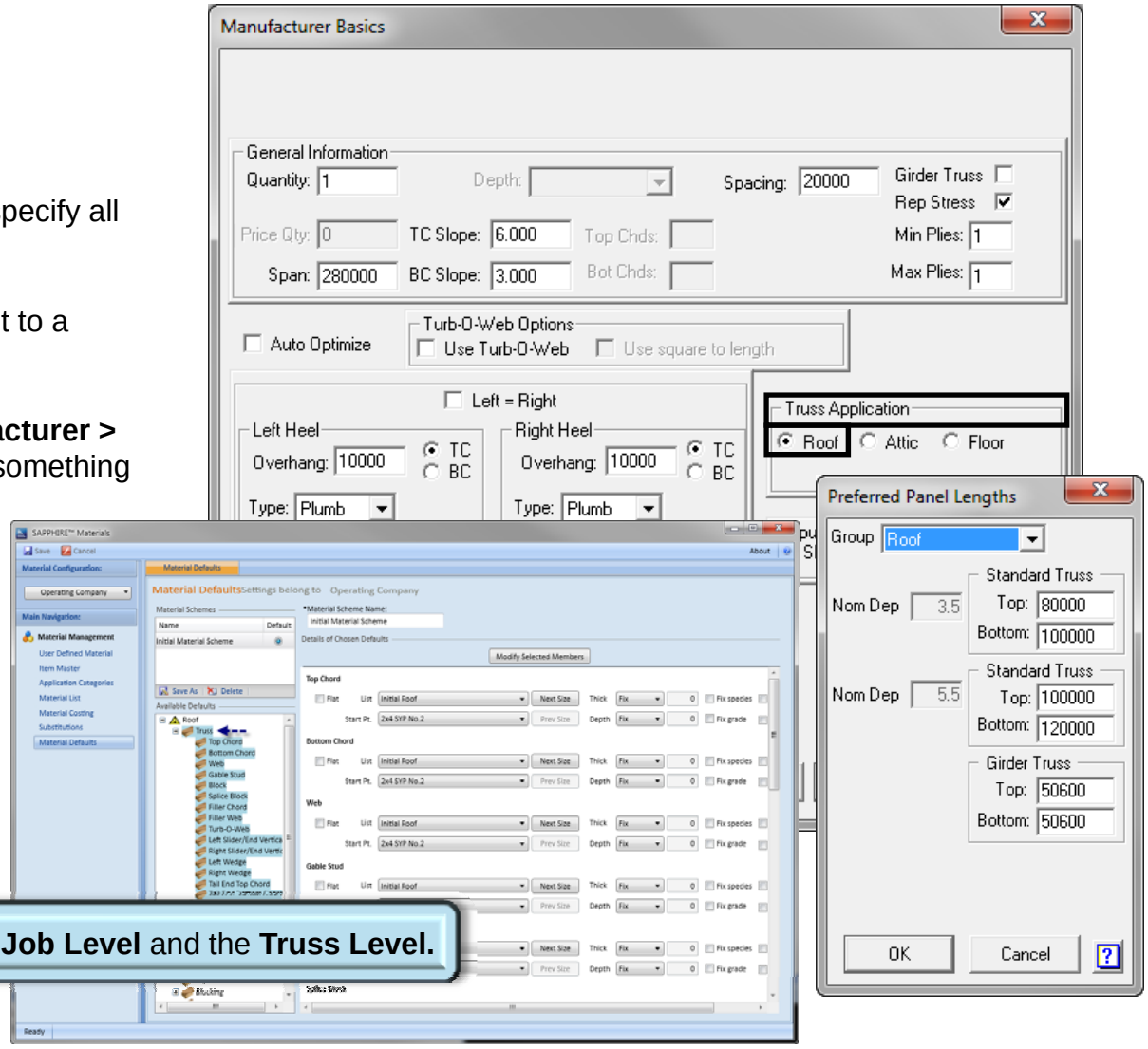
General Information (cont)

Truss Application - Roof:

When set to **Roof**, allows the user to also specify all Basic window settings for Girder Trusses.

For girder trusses, chord lumber may be set to a higher depth than roof trusses.

The user may also set the **Setup > Manufacturer > Geometry > Preferred Panel Lengths** to something other than the default **5'- 6"**



NOTE: Preferred Panel Lengths will be discussed in another section.

NOTE: All settings can be modified at the **Job Level** and the **Truss Level.**

Basics

General Information (cont)

Truss Application - Attic:

When set to **Attic**, allows the user to specify all Basic window settings for attic trusses.

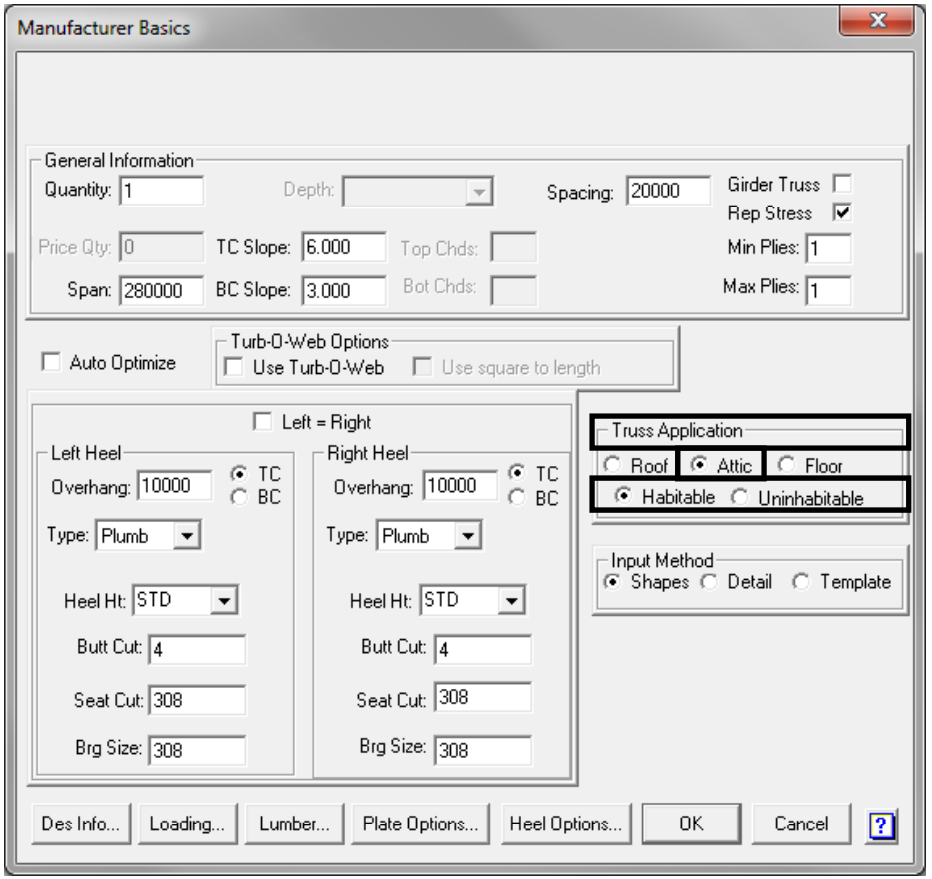
For attic trusses, all settings under **Des Info, Loading, Lumber, Plate Options** and **Heel Options** may be set as the starting point for upcoming designs.

These settings work the same as roof trusses but with a few differences.

The first new options are the radio buttons for **Habitable** and **Uninhabitable** applications.

Loading will default to an additional **45 psf** of attic room load.

Chord Lumber may be set to start at a larger depth than roof trusses.



NOTE: All settings can be modified at the **Job Level** and the **Truss Level.**

Basics

General Information (cont)

Truss Application - Floor:

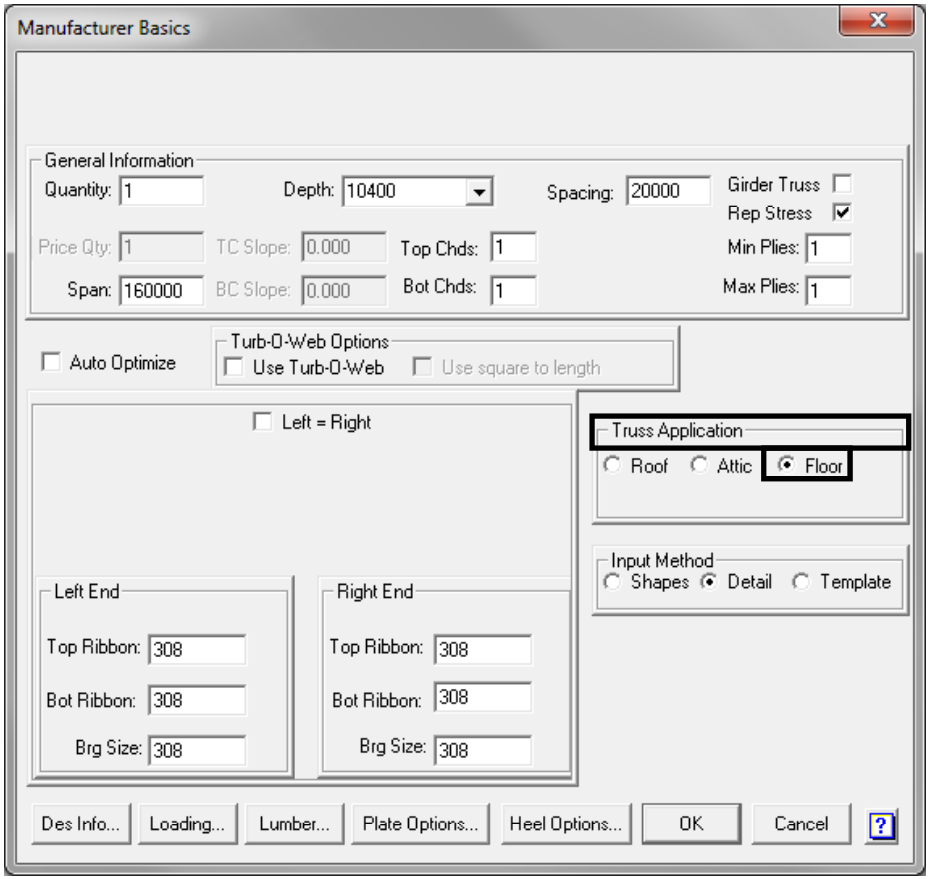
When set to **Floor**, alters the Basic window for floor input and allows the user to specify all settings for floor trusses.

For floor trusses, all settings under **Des Info, Loading, Lumber, Plate Options** and **Heel Options** may be set as the starting point for upcoming designs.

These settings work the same as roof and attic trusses but with a few differences.

Loading will change to floor load, **55 psf** by default

Chord Lumber will change to **4X2** by default.



NOTE: All settings can be modified at the **Job Level** and the **Truss Level.**

Basics

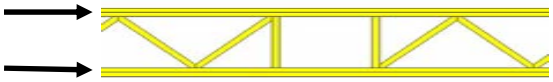
General Information (cont)

Truss Application - Floor:

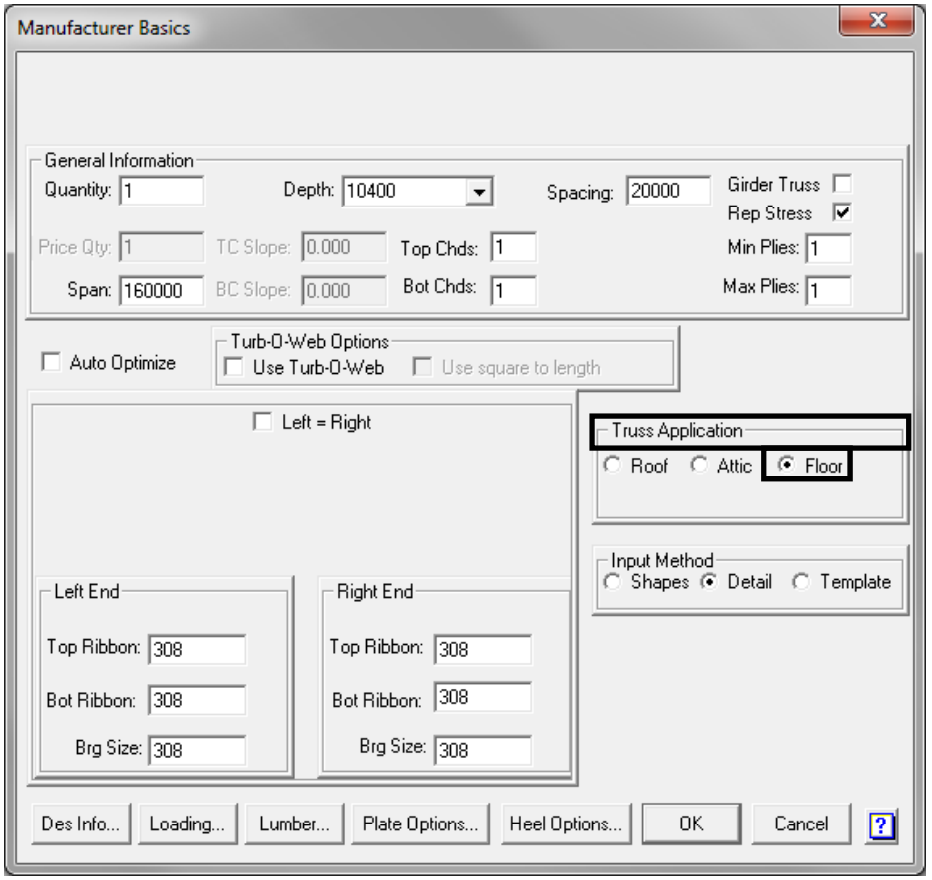
When the Floor radio button selected, the Basics window changes to accommodate floor truss input. The differences will be discussed here. Options that match roof input were discussed on previous pages.

Depth – Enter floor truss depth here or select a Posi-Strut web size. This box will activate when the Floor radio button is clicked in Truss Application.

Top Chds - This specifies the number of Top Chords to be used when a stacked top chord is required.



Bot Chds - This specifies the number of Bottom Chords to be used when a stacked bottom chord is required.

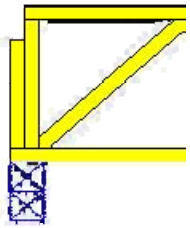


Basics

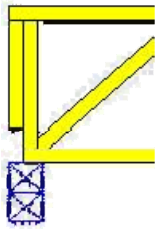
General Information (cont)

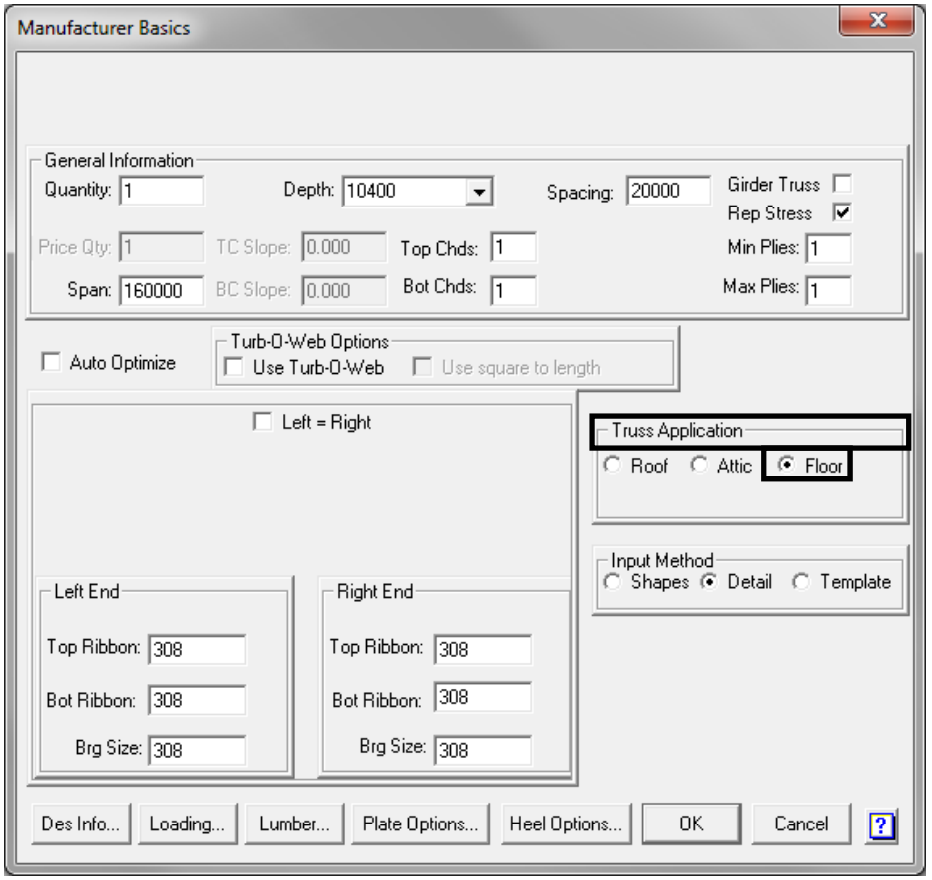
Truss Application - Floor:

Top Ribbon – Enter floor truss depth here or select a Posi-Strut web size. This box will activate when the Floor radio button is clicked in Truss Application.



Bot Ribbon - This specifies the number of Top Chords to be used when a stacked top chord is required.





Basics

Turb-O-Web - Activation

The software is shipped with the Turb-O-Web capability switched OFF by default.

Turb-O-Web International Pty Ltd must issue a 9-digit code before the feature can be used in the software.

To contact **Turb-O-Web International** email: aust.turboweb@bigpond.com

After having received the 9-digit authorization code, the code must be entered in the MiTek software before the function becomes available.

To enter the 9-digit Turb-O-Web code in MiTek software;

Browse to the location of the MiTek software installation folder.

Open the MiTek software folder

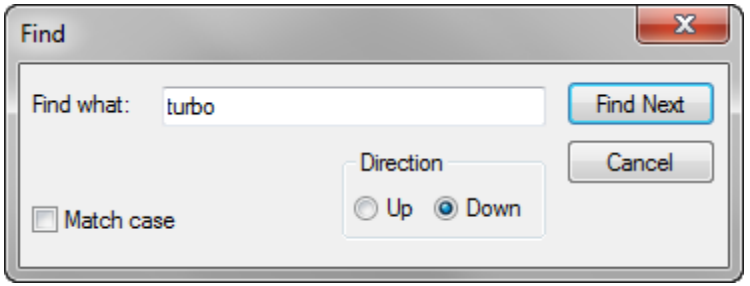
Open the **Data** folder and Search for the **mi2000.ini** file

Double click the mi2000.ini

Click **Edit > Find**, type in **turbo** and click **Find Next**
The search will find the following location

Enter the 9-digit code after Authorized=

Click **File > Save**




```
[CUSTOM NOTES]
<End>
[Turboweb]
Authorized=012345678
```

Basics

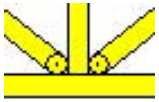
Turb-O-Web - Activation (cont)

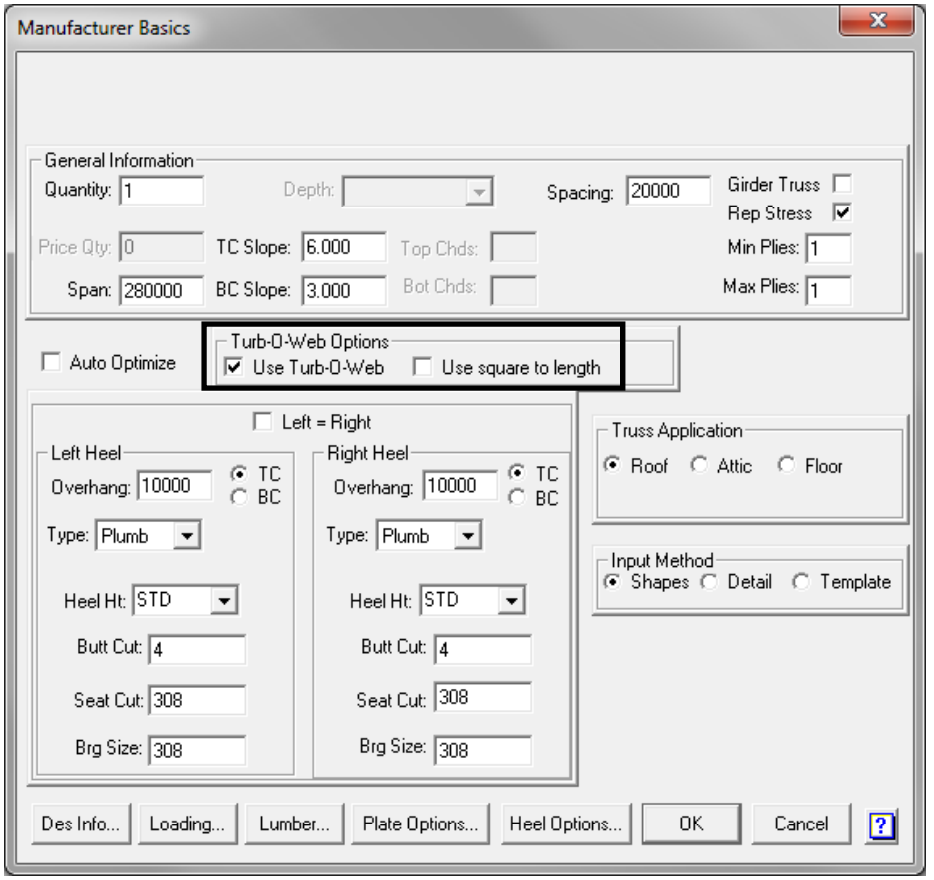
Turb-O-Web® is a patented system of cutting webs at stock length with rounded ends.

Turb –O-Web Options – This becomes available only after a Turb-O-Web Authorization Code has been entered.

Use Turb-O-Web – Activates the Turb-O-Web functionality.

Use Square to Length – When the truss requires an exact length with a square cut on one end. An example would be a square end kingpost at the three web joint of a Howe truss.





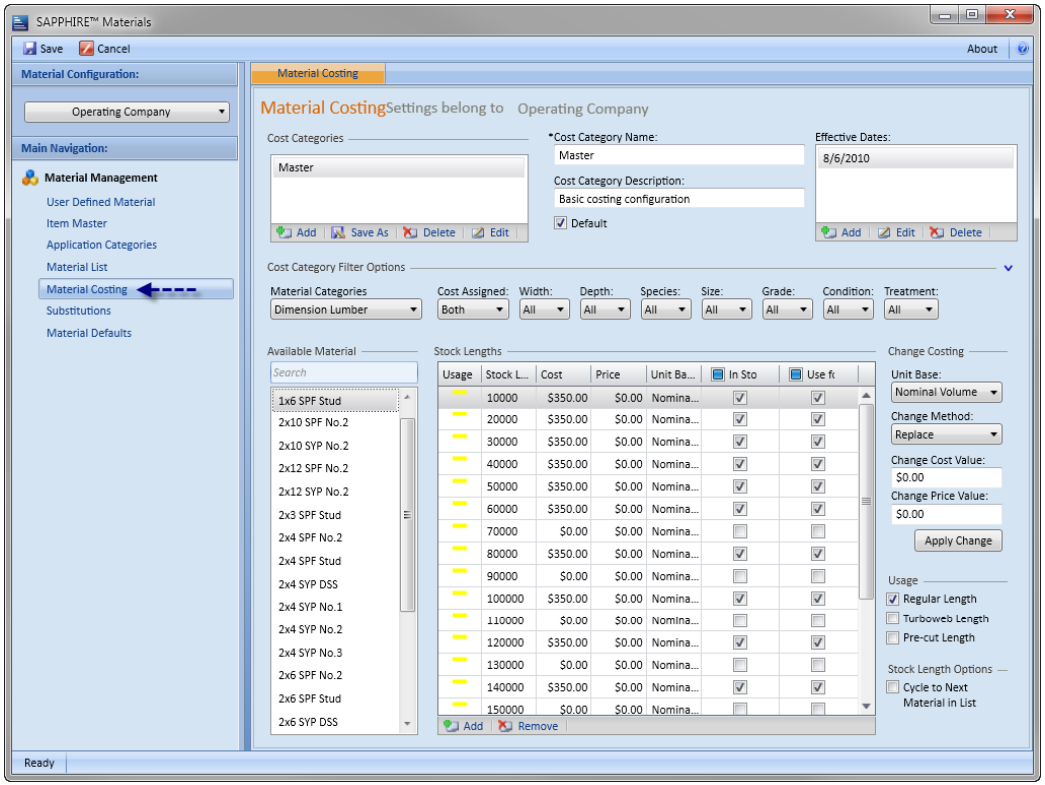
Basics

Turb-O-Web - Inventory

Typically, **Turb-O-Webs** are stocked in 6-inch increments from 1-06-00 thru 11-6-00.

From **Setup > Manufacturer > Materials;**

Click the **Material Costing option**.



Basics

Turb-O-Web - Inventory (cont)

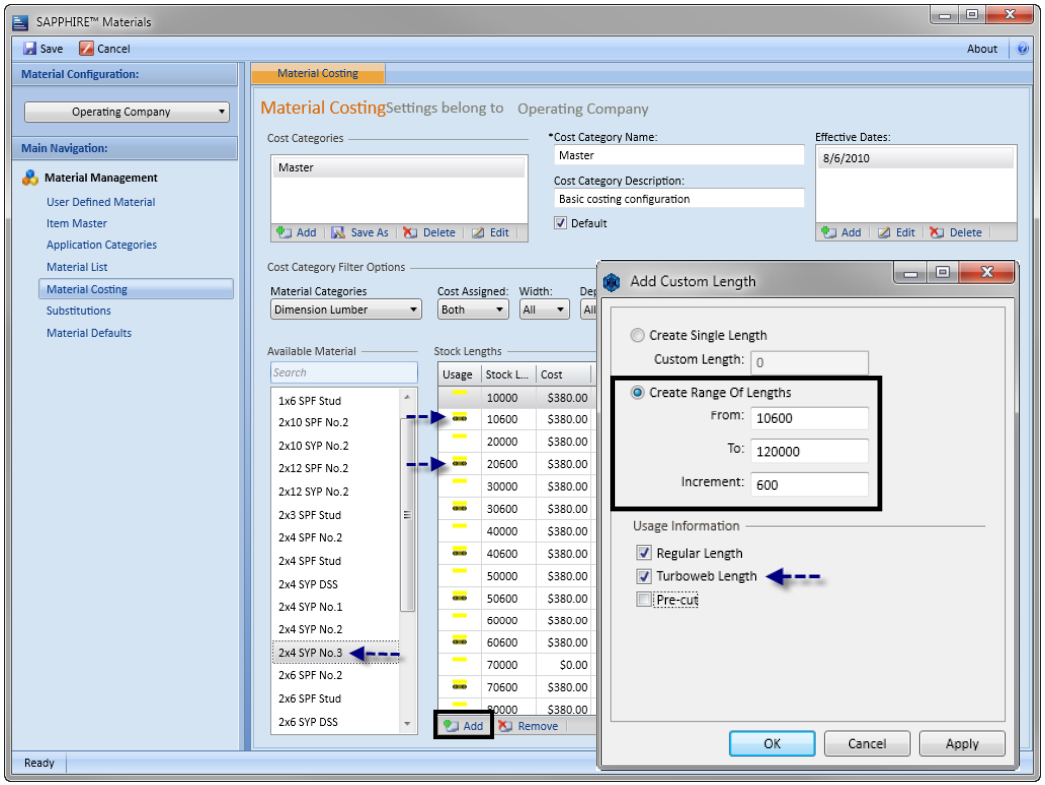
In the **Available Material** panel, select the lumber that will be used for stock length Turb-O-Webs.

NOTE: In the Stock Lengths panel are lengths from 1 foot through 20 feet in one-foot increments.

To add custom lengths for 6-inch incremented Turb-O-Webs:

- Click **Add** button
- Set the radio button to **Create Range of Lengths** and enter the following :
  - **From -** Enter **1.5** (or 10600)
  - **To –** 11.5 (or 110600)
  - **Increment –** 600
- Under **Usage Information**, check the Turboweb Length
- Click **Apply** and **OK**

The 6” incremented material will be added to the Available Material panel and the Turb-O-Web symbol will be added under the Usage column.



Basics

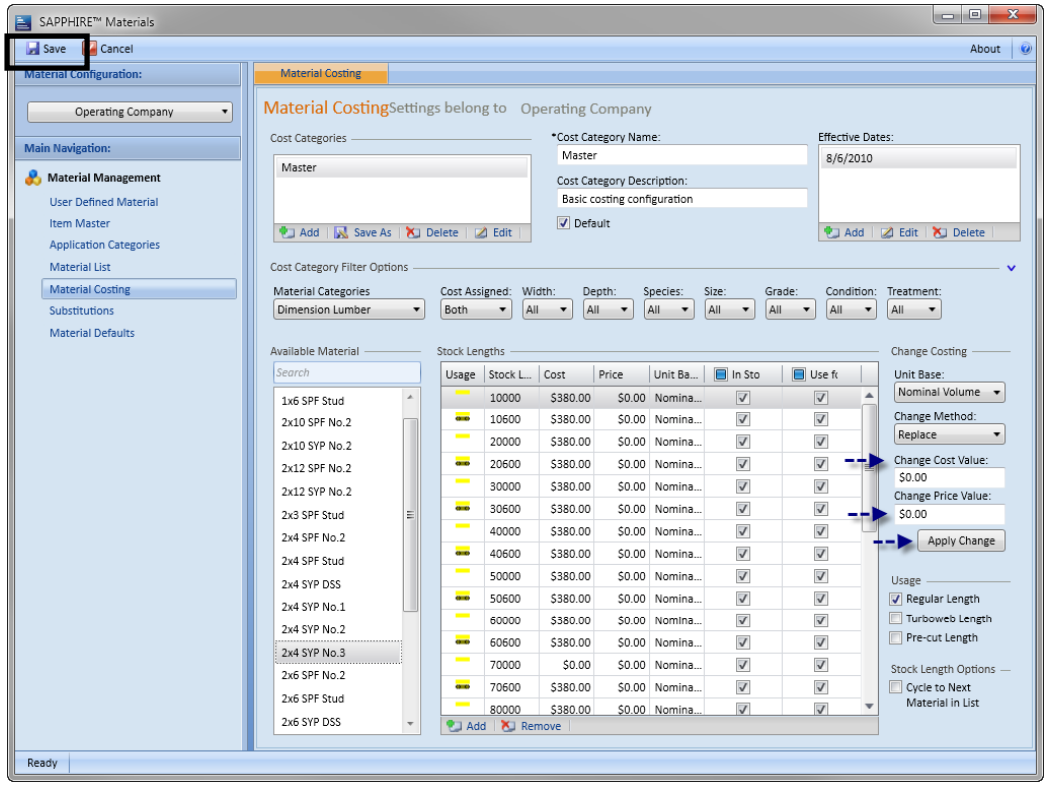
Turb-O-Web - Inventory (cont)

If the price for Turb-O-Webs is different than regular webs, follow these steps;

- Select each **Turb-O-Web** size
- Under the **Change Costing** column, enter the price below **Change Cost Value** or **Change Price Value.**

Click **Apply Change** to update the Turb-O-Web value.

After all changes have been made, click **Save** in the upper left corner.



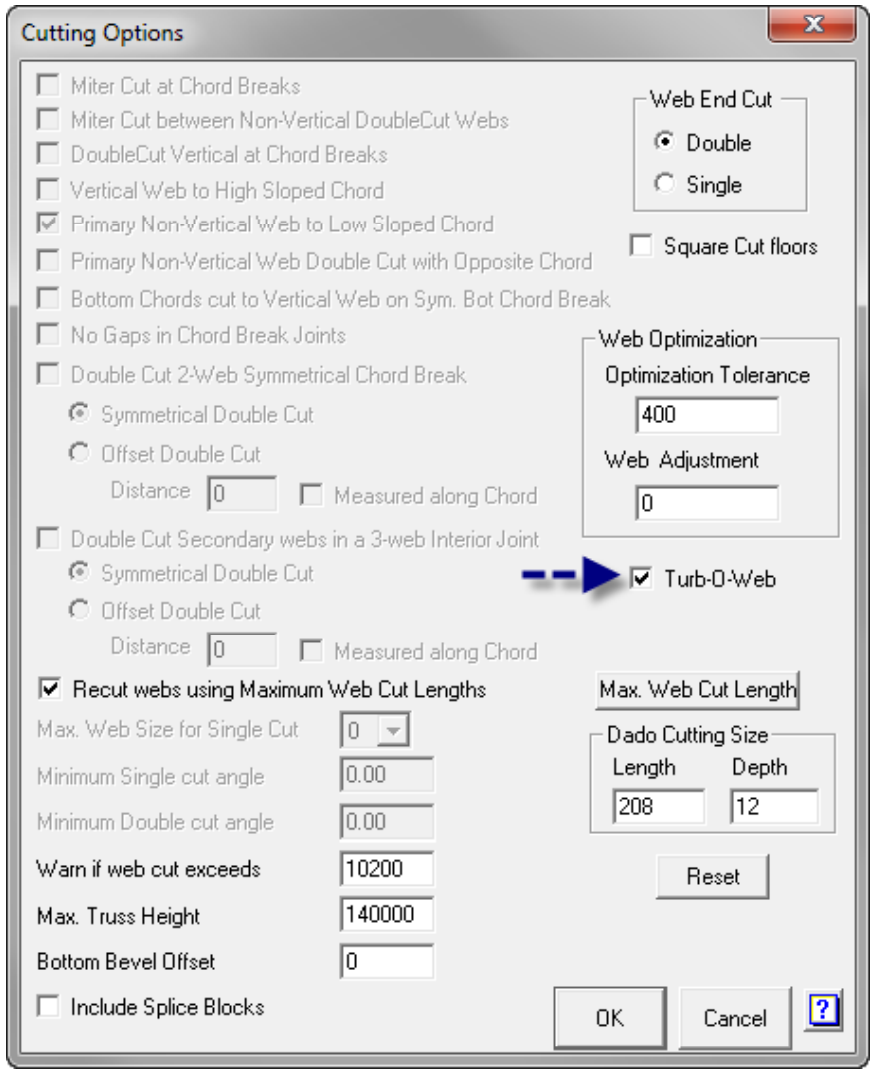
Basics

Turb-O-Web - Cutting Options

From **Setup > Manufacturer > Geometry > Cutting Options**

Cutting Options – This checkbox allows the program to recognize Turb-O-Webs in the cutting with one click.

Turn the Turb-O-Web checkbox ON, and Turb-O-Webs appear on the cutting.



Basics

Turb-O-Web - Optimization

From **Edit > Turb-O-Web Optimization Options**

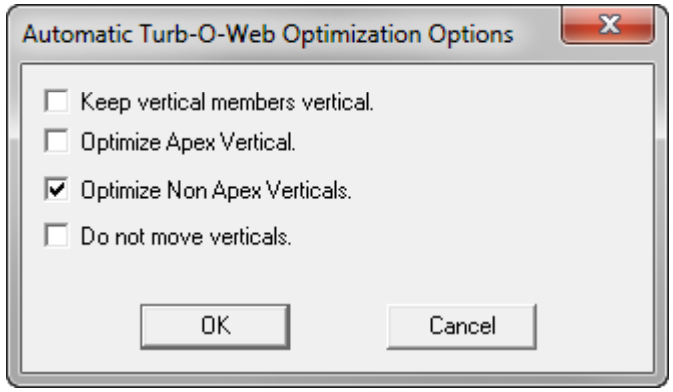
The items in this dialog box allow you to specify the way the program will optimize Turb-O-Webs.

Keep Vertical Members Vertical – Does not allow the program to angle verticals during optimization.

Optimize Apex Vertical - Causes the program to optimize the vertical under the peak of the truss.

Optimize Non Apex Verticals - Causes the program to optimize all verticals not under a peak joint.

Do Not Move Verticals - causes the program to keep all verticals in their present location rather than adjusting them during optimization.



Basics

Turb-O-Web - Cut All Specials

When using Turb-O-Webs, quite often there is a mixture of **"yellow"** webs and **"orange"** webs on the screen.

Orange webs indicate that the web is a stock length.

Yellow webs indicate that the web length is not an exact stock length.

With a truss on screen;

Right click the web to be changed.

Select **Cut All Specials** from the context list

To toggle the web back to a Turb-O-Web;

Click the Undo button, or

Right click the web to be changed back to Turb-O-Web

Select **Turb-O-Web** from the context list

Design Info

Occupancy Categories

Select the appropriate **Occupancy Category** from the drop-down list box. Consult the MiTek engineering department if you're not sure which category is appropriate for your situation. There are four choices. Each is explained as follows:

Agricultural - Buildings and structures that represent a low hazard to human life, in the event of failure, such as agricultural buildings, certain temporary facilities, and minor storage facilities.

Residential - (***Suggested Default***) All buildings and structures except those listed below.

Commercial - Buildings and structures where the primary occupancy is one in which more than 300 people congregate in one area.

Essential - Buildings and structures designated as essential facilities including, but not limited to:

- Hospital and other medical facilities having surgery or emergency treatment areas.
- Fire or rescue and police stations.
- Structures and equipment in government communication centers and other facilities required for emergency response.
- Power stations and other utilities required in an emergency.
- Structures having critical national defense capabilities.
- Designated shelters for hurricanes.

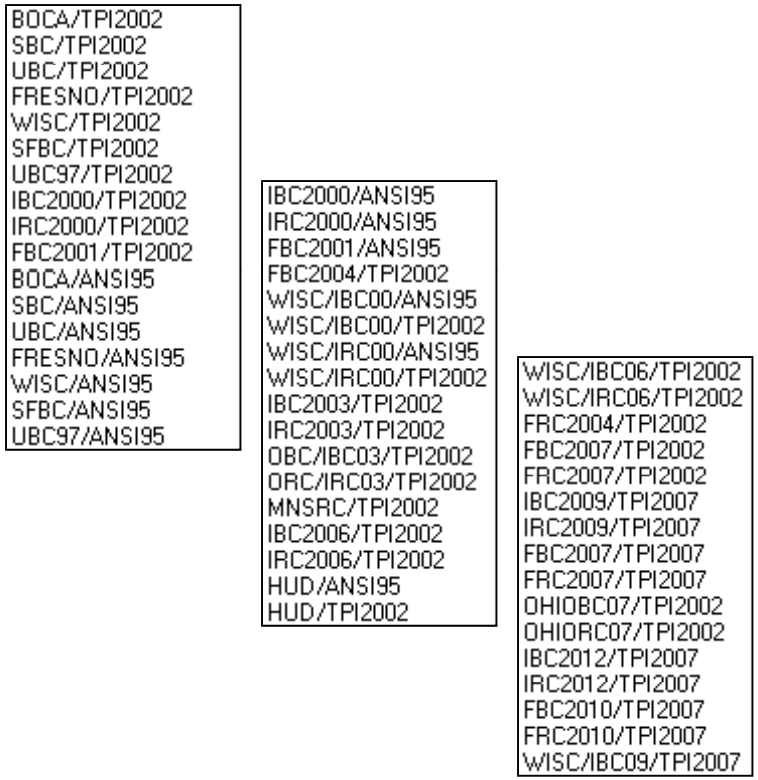
Design Info

Building Code List

All available building codes are listed.

Pick the code required for your area.

If you are not sure of the required building code, check with the Engineer of Record, your local Building Department or a MiTek Engineer.



Design Info

Sheathing/Purlin Spacing

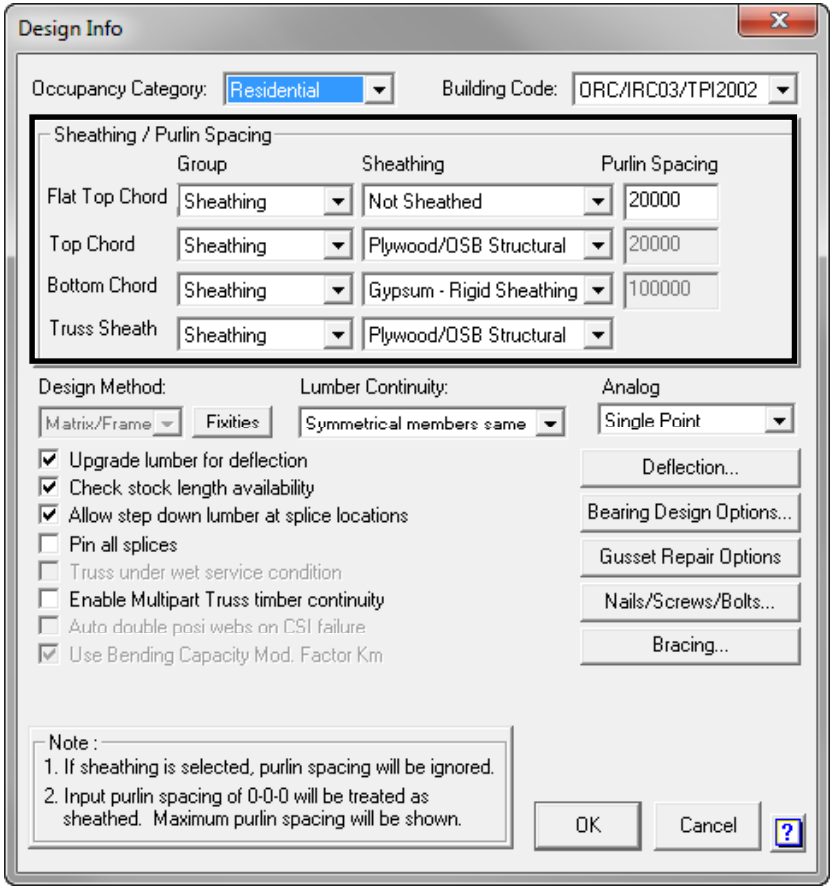
The options shown here are default settings and tell the program if sheathing or purlins will be used for bracing.

Flat Top Chord – This would be used for piggyback base trusses. By default, Not Sheathed, causes all flat top trusses to have purlins. To remove purlins, change **Not Sheathed** to **Plywood**.

Top Chord – This applies to bracing on all members labeled as Top chord.

Bottom Chord - This applies to bracing on all members labeled as Bottom chord.

Truss Sheath – See next page.



NOTE: Set Sheathing to Not Sheathed to activate the purlin spacing windows

Design Info

Sheath Truss

With a truss on screen, click **Tools > Sheath Truss**

Sheathing Options:

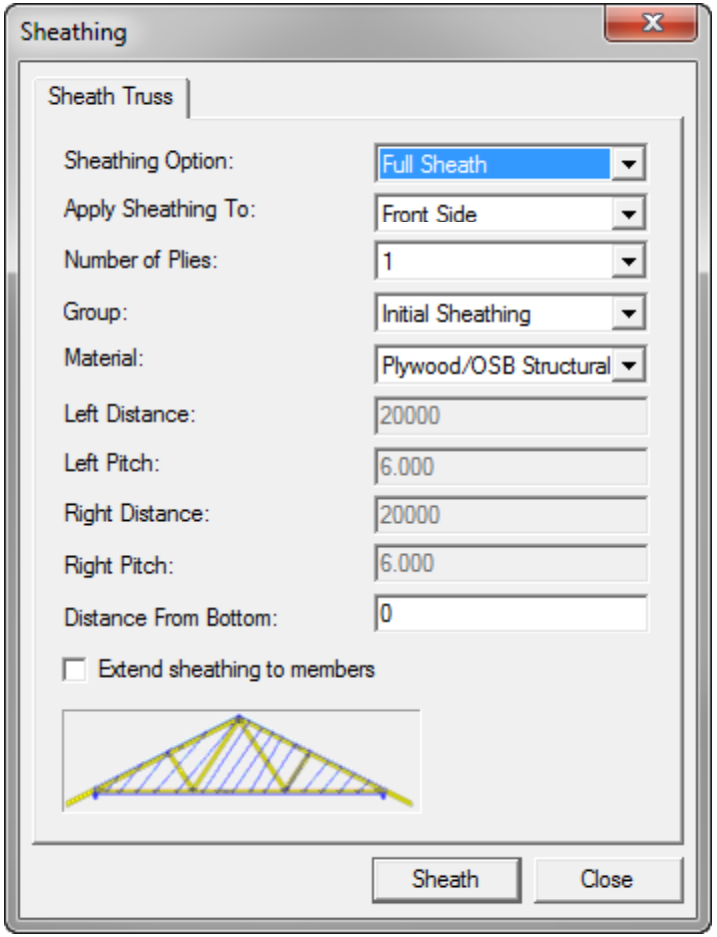
Full Sheath – Will sheath the entire truss on the face of the truss specified and with the number of plies specified.

Left Pitch – This selection will activate the **Left Distance** and the **Left Pitch** options and will sheath according to the information entered.

Right Pitch - This selection will activate the **Right Distance** and the **Right Pitch** options and will sheath according to the information entered.

Center – This option will sheath the center of the truss using The left distance (from) and continuing to the right distance (to).

Cathedral - This selection will activate the **Left** and **Right Distance** and the **Left** and **Right Pitch** options and will sheath according to the information entered.



Design Info

Sheath Truss (cont)

Apply Sheathing To – Tells the program to sheath the **Front Side, Back Side** or **Both Sides**.

Number of Plies – How many layers of sheathing will be applied to the face/faces described in **Apply Sheathing To.**

Group – From the sheathing group created in **Setup > Manufacturer > Materials > Material List > Sheathing > Initial Sheathing.** These groups will contain all material for the group type created.

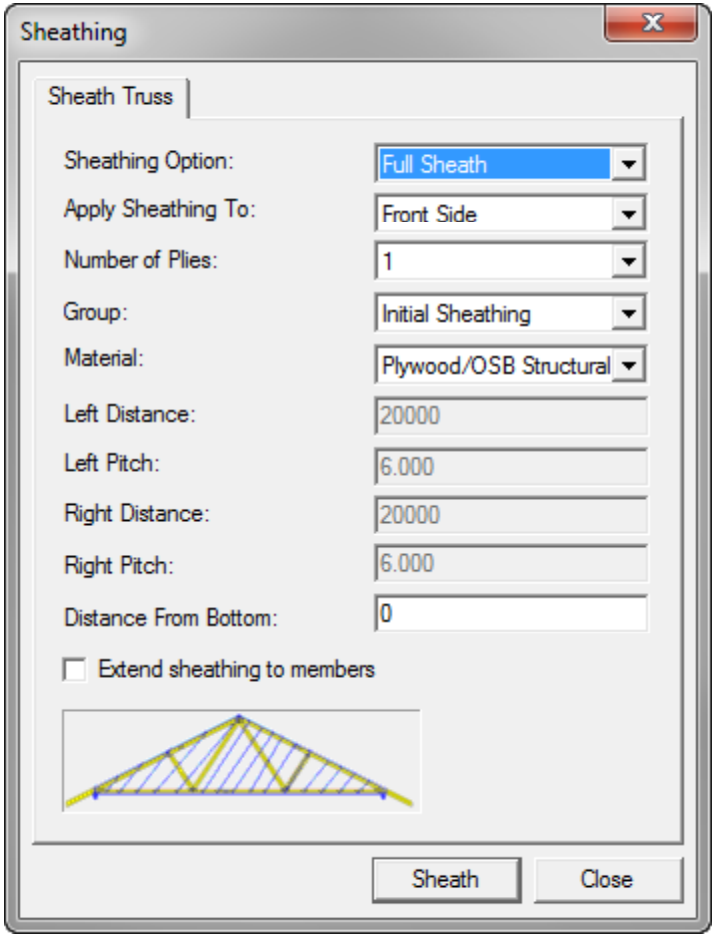
Material – Choose from the material listed under the Group selected.

Left Distance – Where the sheathing will start from the left.

Left Pitch – The slope of the sheathing once the Left Distance has been reached.

Right Distance and **Right Pitch** work the same as the Left information above.

Sheath Button – Applies all options to the truss.



Design Info

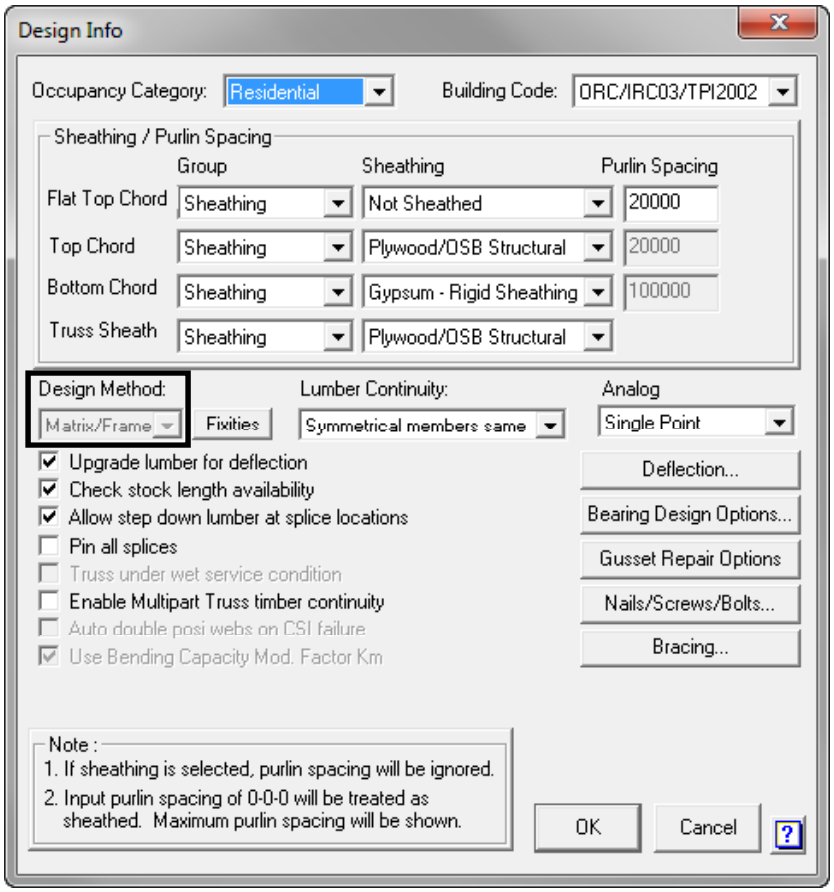
Design Method

The **Design Method** field is used to set the proper truss analysis method for the current truss.

Typically, this field will be set to **Truss** unless a code of **TPI2002** or newer is selected.

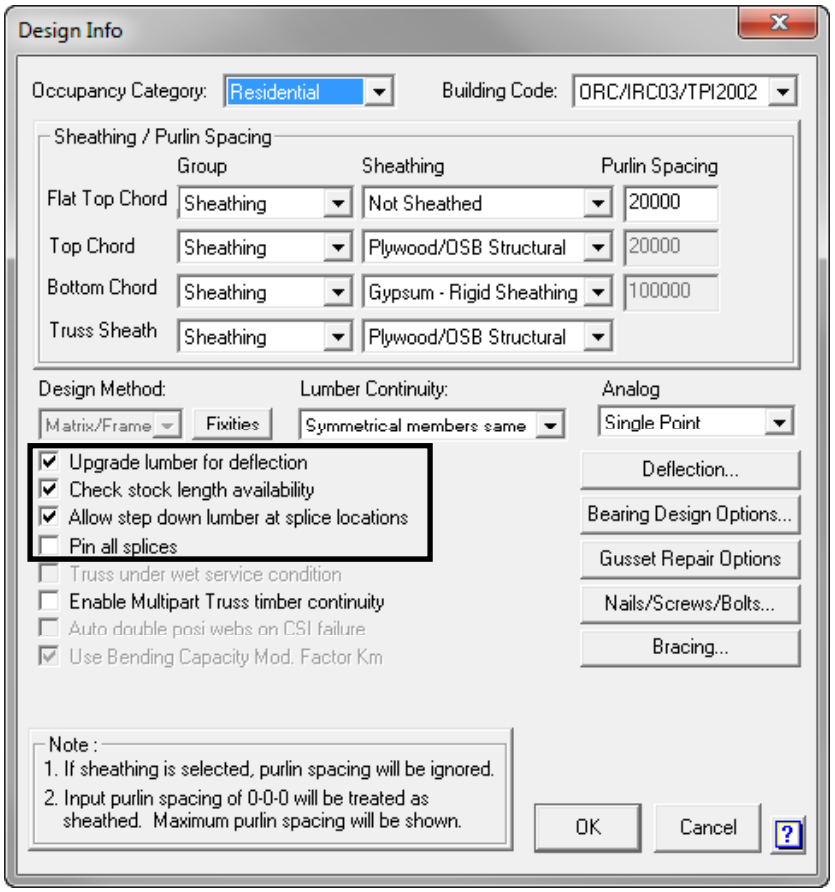
This Truss method should not be used for attic-type trusses. The program will automatically switch to the **Matrix/Frame** analysis method when an attic truss type is selected.

NOTE: With the selection of any code of **TPI2002** or newer, the **Design Method** is grayed out and the system only uses **Matrix Frame**.



Design Info

Design Method (cont)



Upgrade Lumber for Deflection - Select this check box to instruct the program to cycle the lumber if the deflection limit is exceeded. If not checked, and the truss fails deflection during the analysis process, the program will issue a warning.

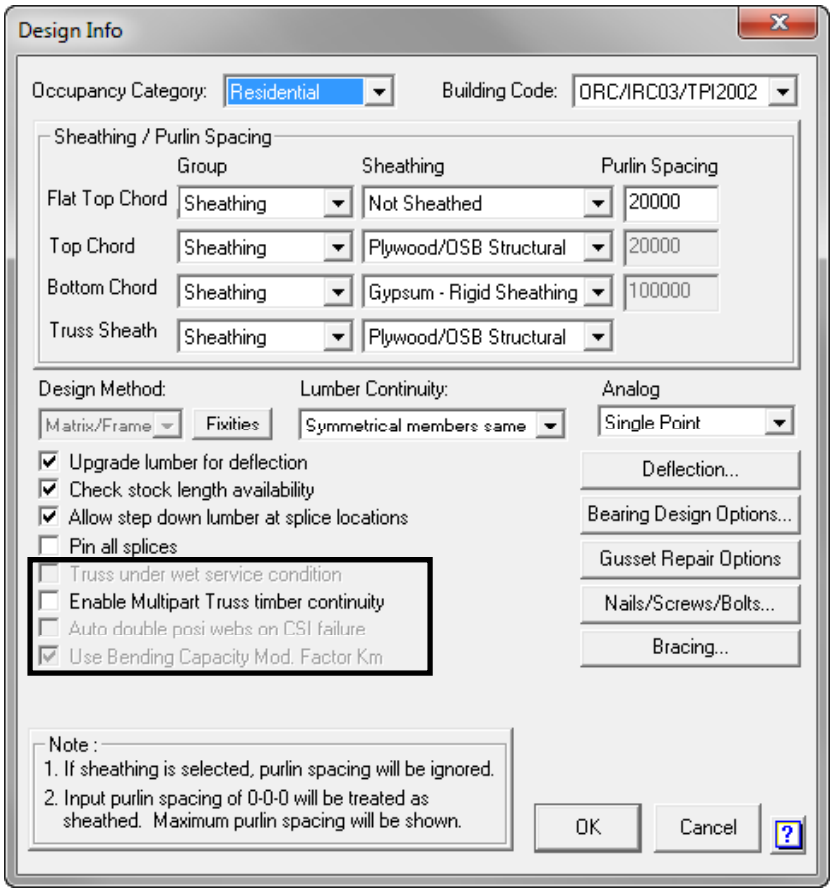
Check Stock Length Availability - Checking this option ensures that all members in the truss will be designed from lumber available in inventory.

Allow Step down Lumber at Splice Locations - Check this option to allow the truss chords on either side of a splice to change size, independent of the other side.
This is only available, but not checked, when **Lumber Continuity** is set to **Symmetrical Members Same**. It is also automatically checked on, and grayed out, when the **Lumber Continuity** is set to **No Continuity**.

Pin All Splices - Some believe that on large span trusses The splices should be designed with pinned joints as opposed to the default, rigid joints. This check box should be checked if the user wants the chord splices to be modeled as pinned joints. This option is only available if you are using Matrix/Frame Design Method. Unless your engineer advises you to do otherwise, this should remain unchecked.

Design Info

Design Method (cont)



Truss Under Wet Service Condition - Check this box if this truss will be exposed to the elements.

Enable Multipart Truss Timber Continuity – Check this option to cause the program to maintain timber continuity on geometrically identical trusses. If you're using **Hinge Plates**, this option causes the program to apply the lumber type you've used on the bottom truss to the top truss.

Auto Double Posi Webs on CSI Failure - When checked, this option causes the program to automatically double Posi Webs (assuming you have placed Posi Webs on the truss) when analysis shows a CSI failure.

Use Bending Capacity Mod. Factor Km - This factor increases the allowable bending stress for lumber. Values range from just below 1 to 1.3. There is also a factor that only applies to heels, Panel Point Moment Region, and, according to TPI 2007, this factor can be applied when Bending Capacity Modification Factor is off. If you turn **Km off** the program assumes Km=1 and will apply Panel Point Moment Region at the heel. Having **Km on** will result in more competitive designs in many cases.

Design Info

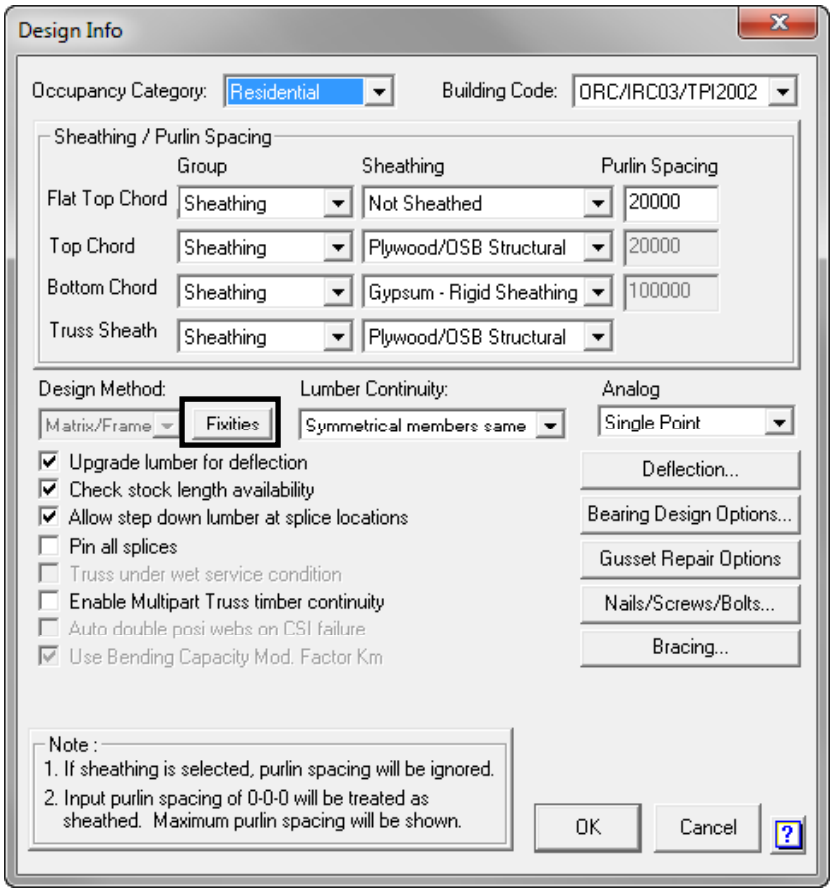
Fixities

The question is often asked, what do the Fixities switches do in the MiTek Engineering software and why should a designer pick one or the other.

The purpose of this document is to help in the understanding of what the options are and what affects these options have on designs.

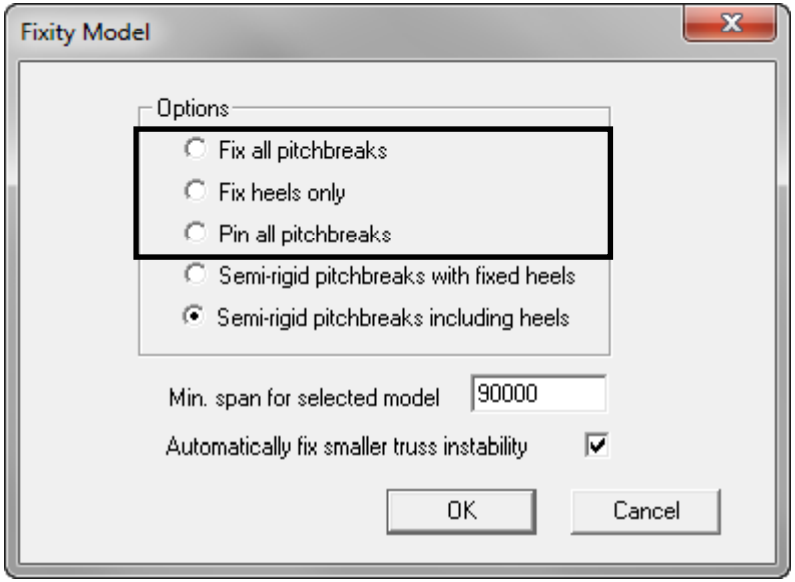
The Fixities button is located on the Design Info dialog window.

Fixities may be set at the Manufacturer level and/or modified at the Job level or on a truss by truss basis.



Design Info

Fixities (cont)



The first thing to understand is what it means for pitch breaks to be Fixed, Pinned or Semi-Ridge.

Pinned:
A Pinned joint can be described by looking at a heel joint on a truss behaving like a door hinge.

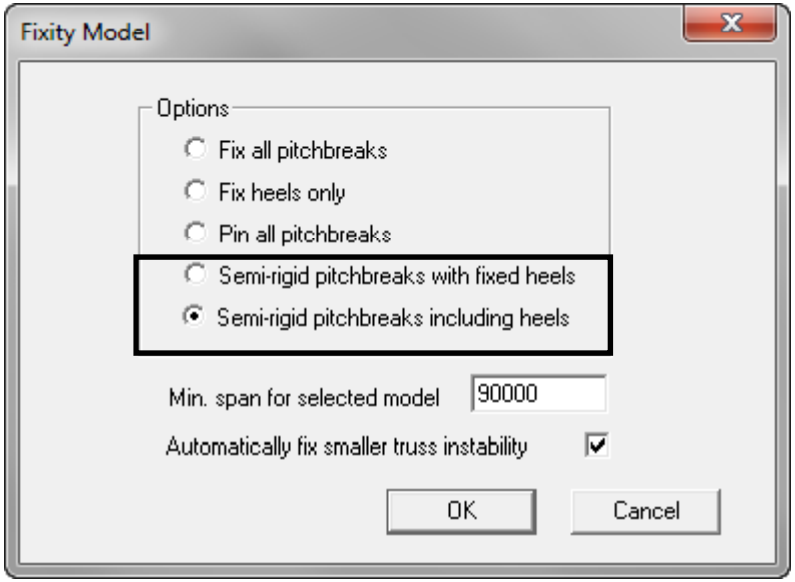
In an open face jack truss, with a pinned heel joint, the top chord would fold down onto the bottom chord because the heel would not have any resistance to rotation or moment.

In a common truss, with the top chord in compression and the bottom chord in tension, the plate at the heel joint resists these axial forces of compression and tension but does not resist any moment from the loads in the middle of the panels. Therefore the moments would all be carried by the lumber and the plates would only be resisting the axial forces. This will, in theory, cause higher lumber CSIs and lower plate CSIs.

Fixed (Rigid):
Using the heel of that same common truss, there is no allowance for rotation to occur between the top and bottom chord so some of the panel load in the top chord will be transferred to the bottom chord resulting in lower lumber CSIs and higher plate CSIs.

Design Info

Fixities (cont)



Semi-rigid:
In a Semi-rigid joint, we are somewhere in-between where the plate at the heel would only resist a portion of the rotation or moment.

Semi-rigid joints are probably the most economical choice for most truss designs without compromising safety. This option gives a nice balance between keeping chord lumber grades low without a significant increase in plates sizes so the overall truss is competitively designed.

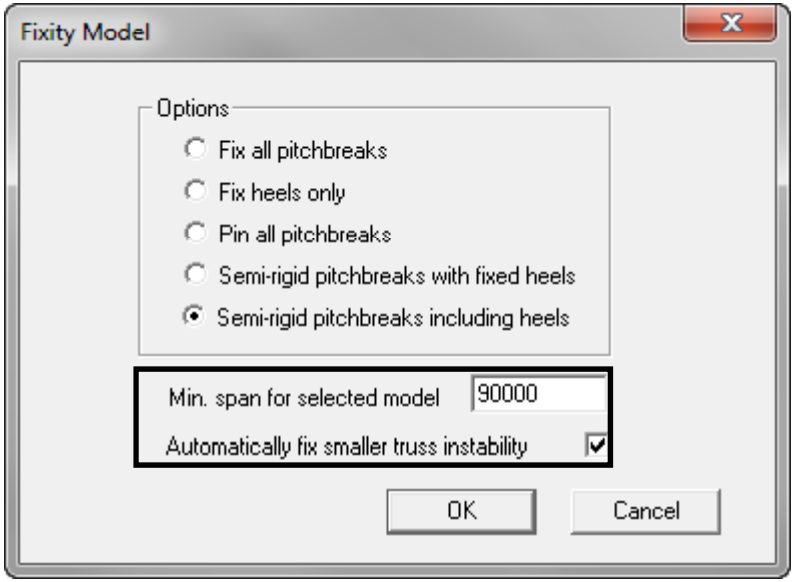
Some people feel that heel plates are fairly large compared to other pitch break plates and therefore heel joints should be designed as fully rigid with the rest of the pitch breaks Semi-rigid.

This option is available as “Semi-rigid pitch breaks with fixed heels”.

MiTek recommends using the most economical, realistic and still safe option.

Design Info

Fixities (cont)



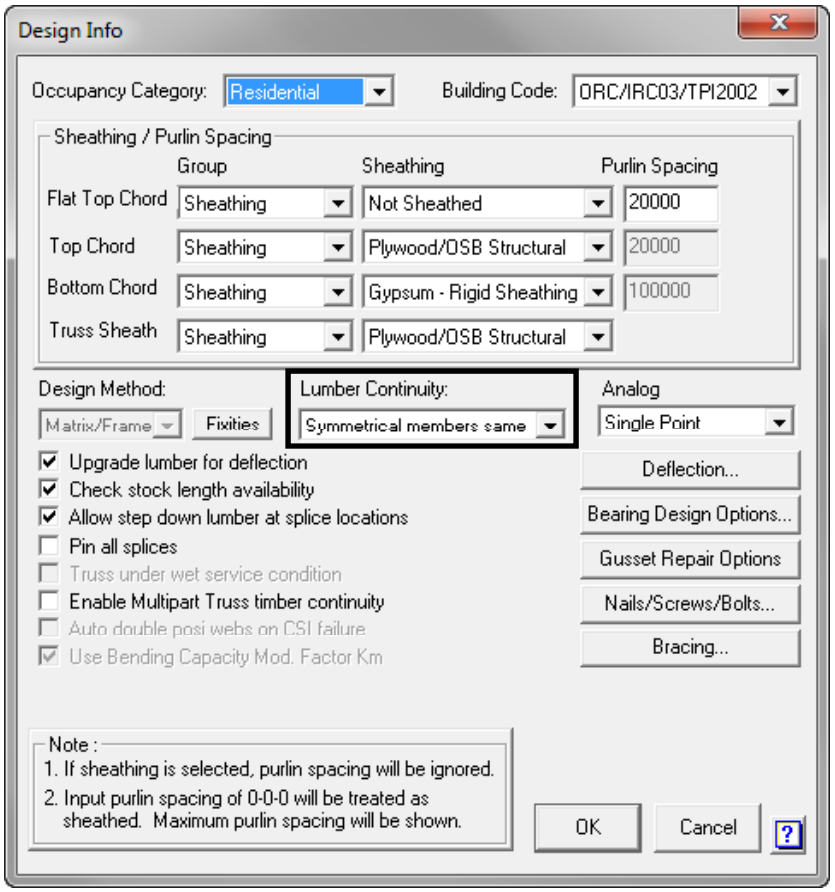
Min. span for selected model:

What this option does is **Pin** all pitch breaks for trusses shorter than the span entered. This is helpful because short span trusses will typically not require higher grade chord lumber even if the pitch breaks are all pinned and therefore, you can pin these joints to get the smallest possible plates. The best length to be entered here is really dependent on the minimum chord grade lumber used for your designs, the loading and the panel lengths; however a good starting point is between 15-25 feet.

Automatically fix smaller truss instability:
This option should always be checked as it will make a small un-triangulated truss work without compromising safety or the competitiveness of the design

Design Info

Lumber Continuity



Allows the truss chords to be designed with symmetric grades and sizes, or for each chord member to be sized and graded individually. This feature may yield to extremely competitive designs by allowing each member, after splicing, to be designed with the minimum grade and size.

Symmetrical Members Same - If the truss has symmetrical members, they will be graded and sized the same regardless of loading and bearing conditions.

Top Chord Same & Bottom Chord Same - Selecting this option will design the entire top chord, regardless of truss configuration and special factors, with the same grade and size. The entire bottom chord will then be sized and graded independently of the top chord with the appropriate size and grade.

All Chords Same - Selecting this option instructs the program to use the same grade and size of lumber for both the top Chord and the bottom chord. The program will use the lumber of the most critical chord for both the top and bottom chords. While this option doesn't produce the most cost-effective truss, it does make lumber size and grade selection consistent.

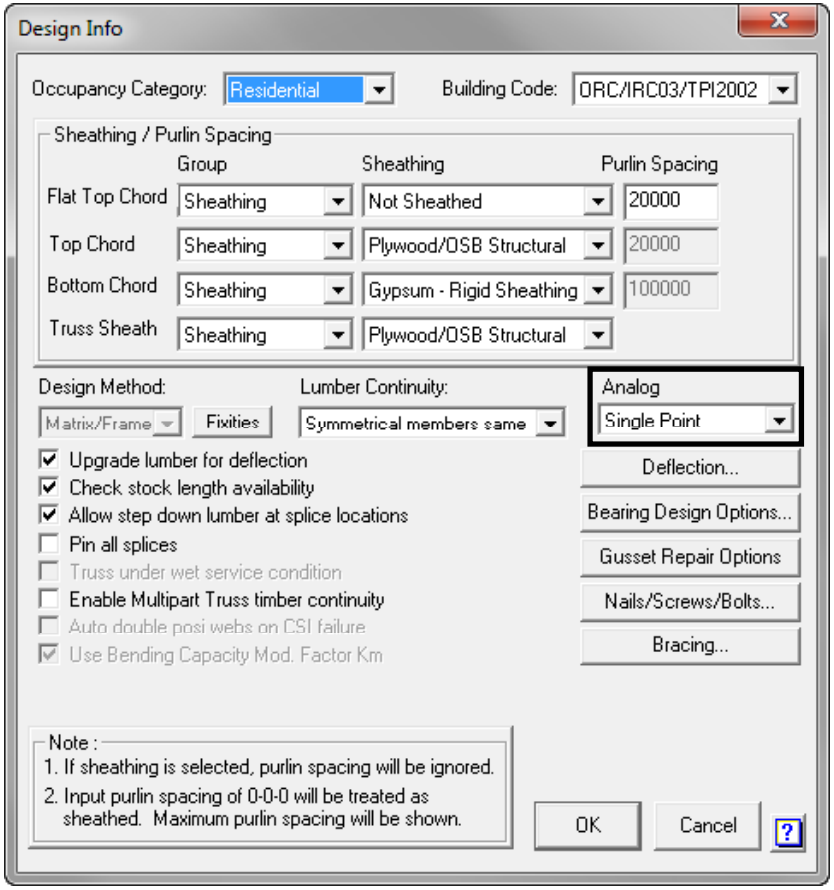
No Continuity -

Design Info

Analog

Single Point – The program will apply normal sized sliders.

Multi-Point - The preferred setting. This allows the program to apply smaller sliders.



Design Info

Deflection

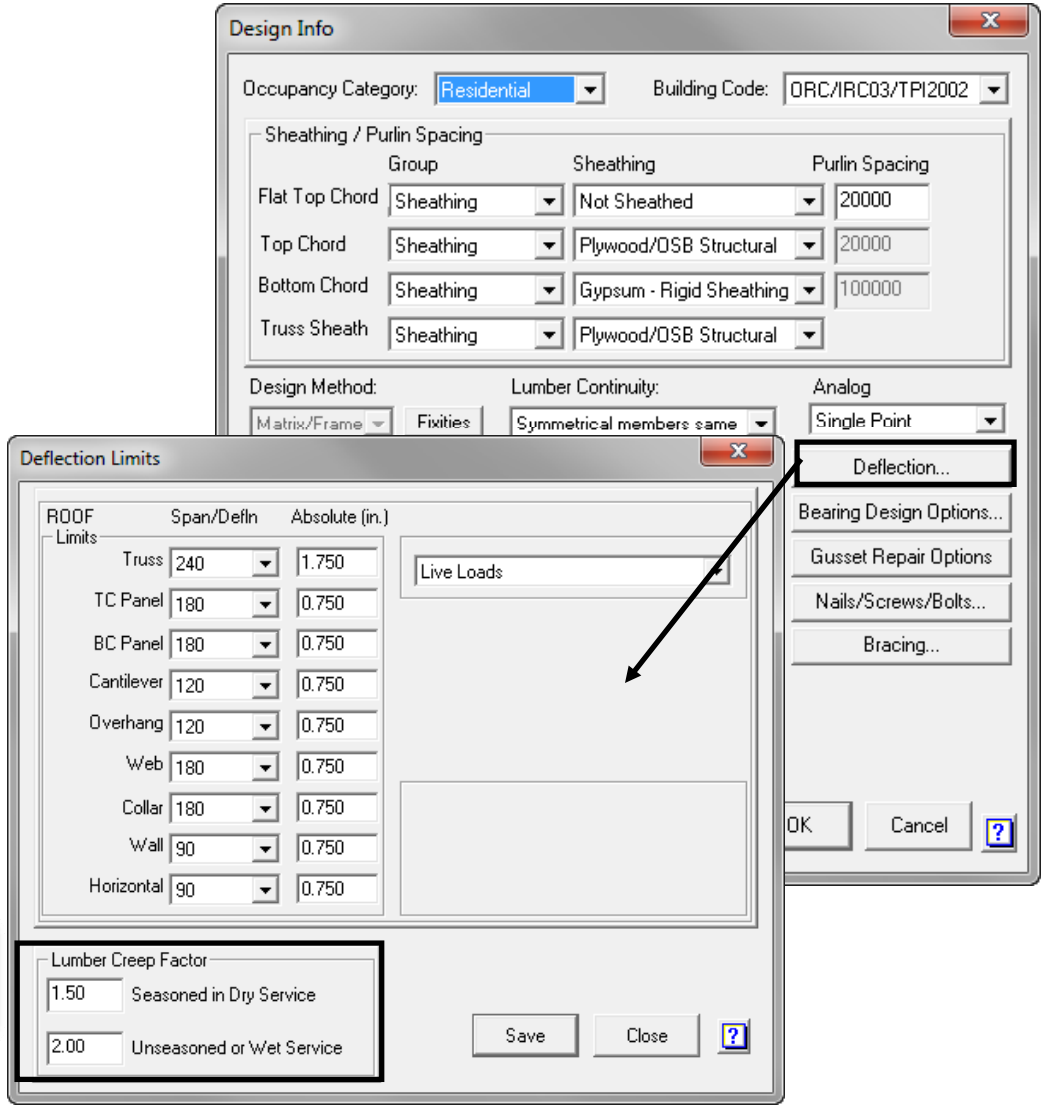
Allows the user to set the deflection limits for four items;

- **Live Loads**
- **Total load**
- **Wind Live**
- **Wind Total**

NOTE: While the default Deflection Limits dialog box reflects acceptable deflection limits, you should use your local building code limits or consult the MiTek engineering department for additional information about deflection limits.

Creep - The property of wood that causes trusses, under a sustained long-term load (dead load), to deflect more and more with time.

NOTE: Lumber Creep Factor is only visible using a Building Code with TPI2002 or higher

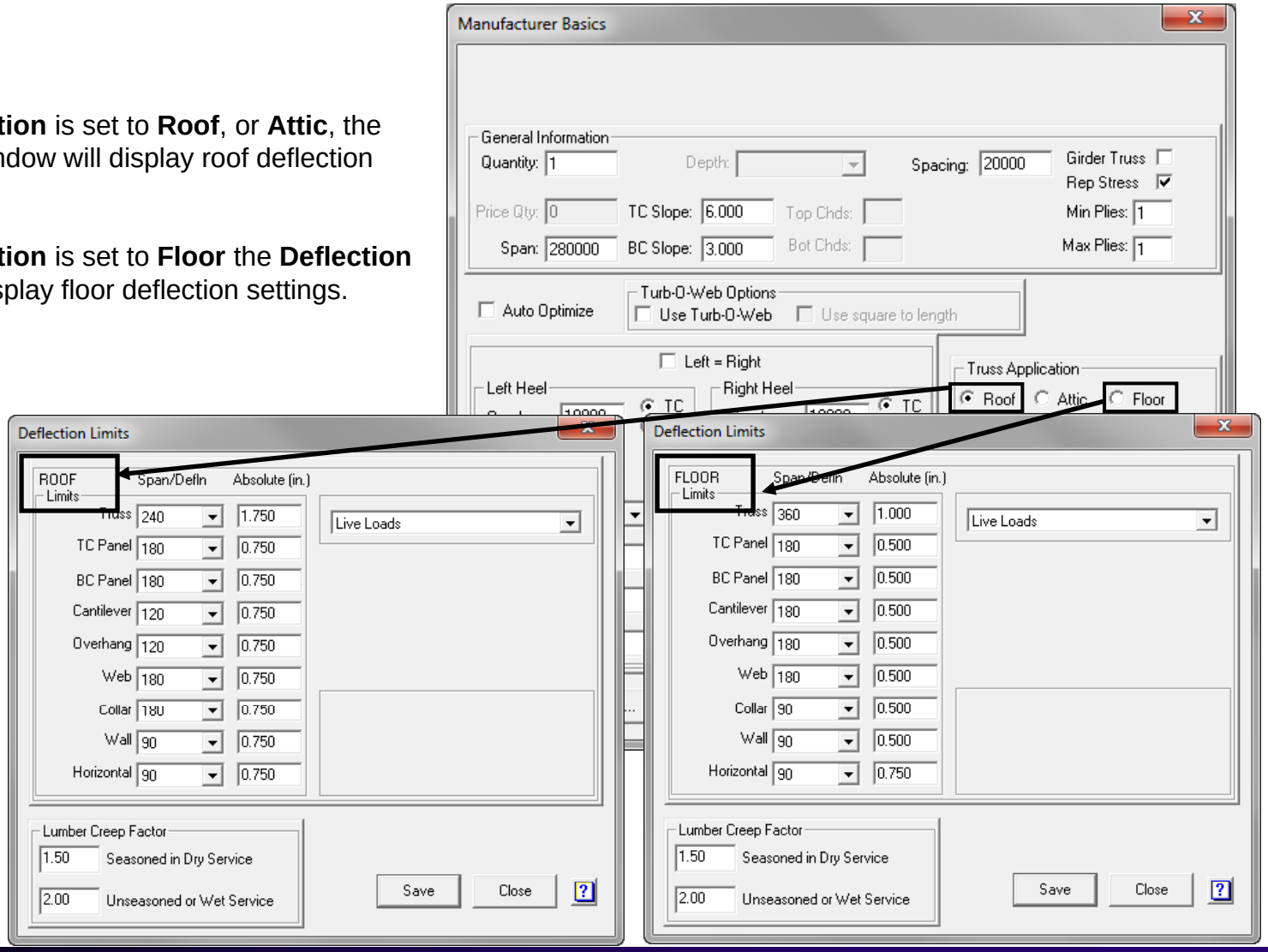


Design Info

Deflection (cont)

When **Truss Application** is set to **Roof**, or **Attic**, the **Deflection Limits** window will display roof deflection settings.

When **Truss Application** is set to **Floor** the **Deflection Limits** window will display floor deflection settings.

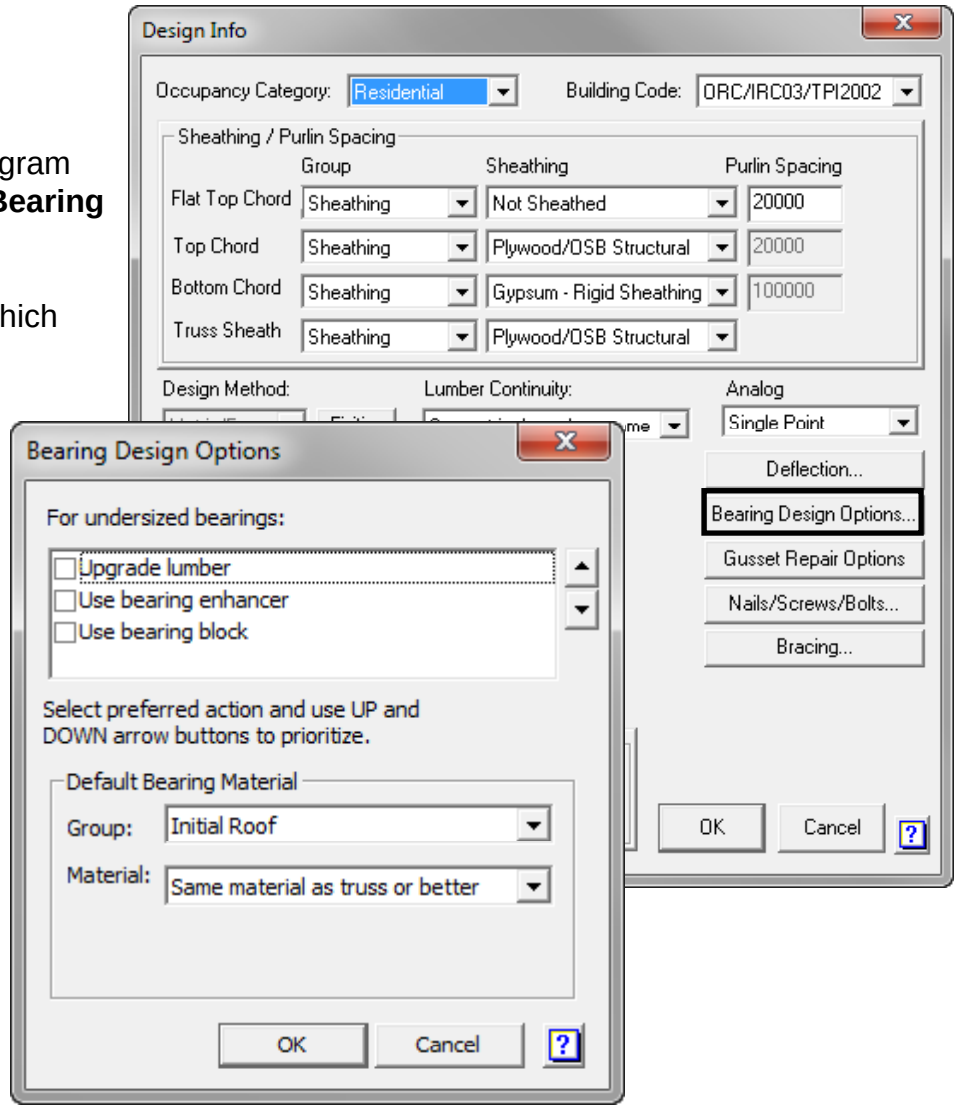


Design Info

Bearing Design Options

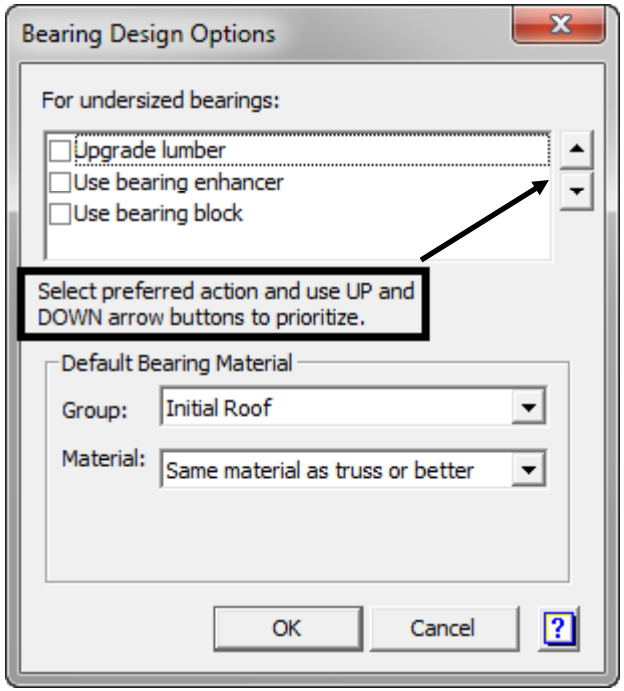
When an **Undersized Bearing** condition occurs the program will allow the user to specify which of the **Undersized Bearing Options (UBO)** will be used.

One or more UBO's may be checked and the order in which they will be considered can be set.



Design Info

Bearing Design Options (cont)



The four options are:

- **Upgrade lumber**
- **Use bearing enhancers**
- **Add bearing blocks** (only for one ply trusses).
- **None of the above** (no options checked)

When the desired options have been checked and the order of use set;

If the first option selected fails to eliminate the Undersized Bearing condition, the program will try the next acceptable condition specified.

Default Bearing Material - By default, truss material or better will be selected. The lumber **Group** may be changed as well as **Material** type.

NOTE: The program will not try UBO's in combination.

NOTE: When all available UBO's have been tried and the undersized bearing is not resolved, the program will issue a warning.

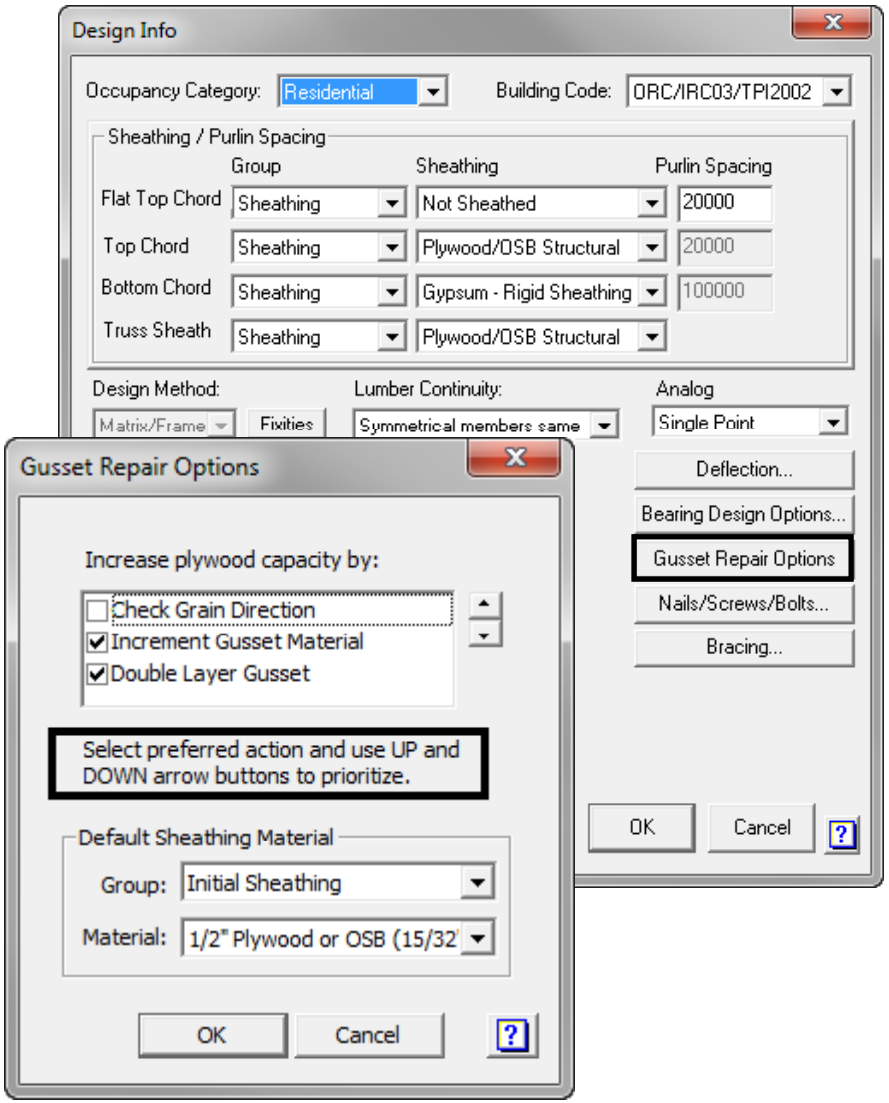
Design Info

Gusset Repair Options

A Group, specific to gusset repairs, can be created in Lumber Inventory and a list of material options can be added to the group.

Once created, the needed group may be selected from this window and the material selected from the Material pull down list.

Increase Plywood Capacity By - One or more items may be checked and the order in which they will be tried can be set.



Design Info

Nails/Screws/Bolts

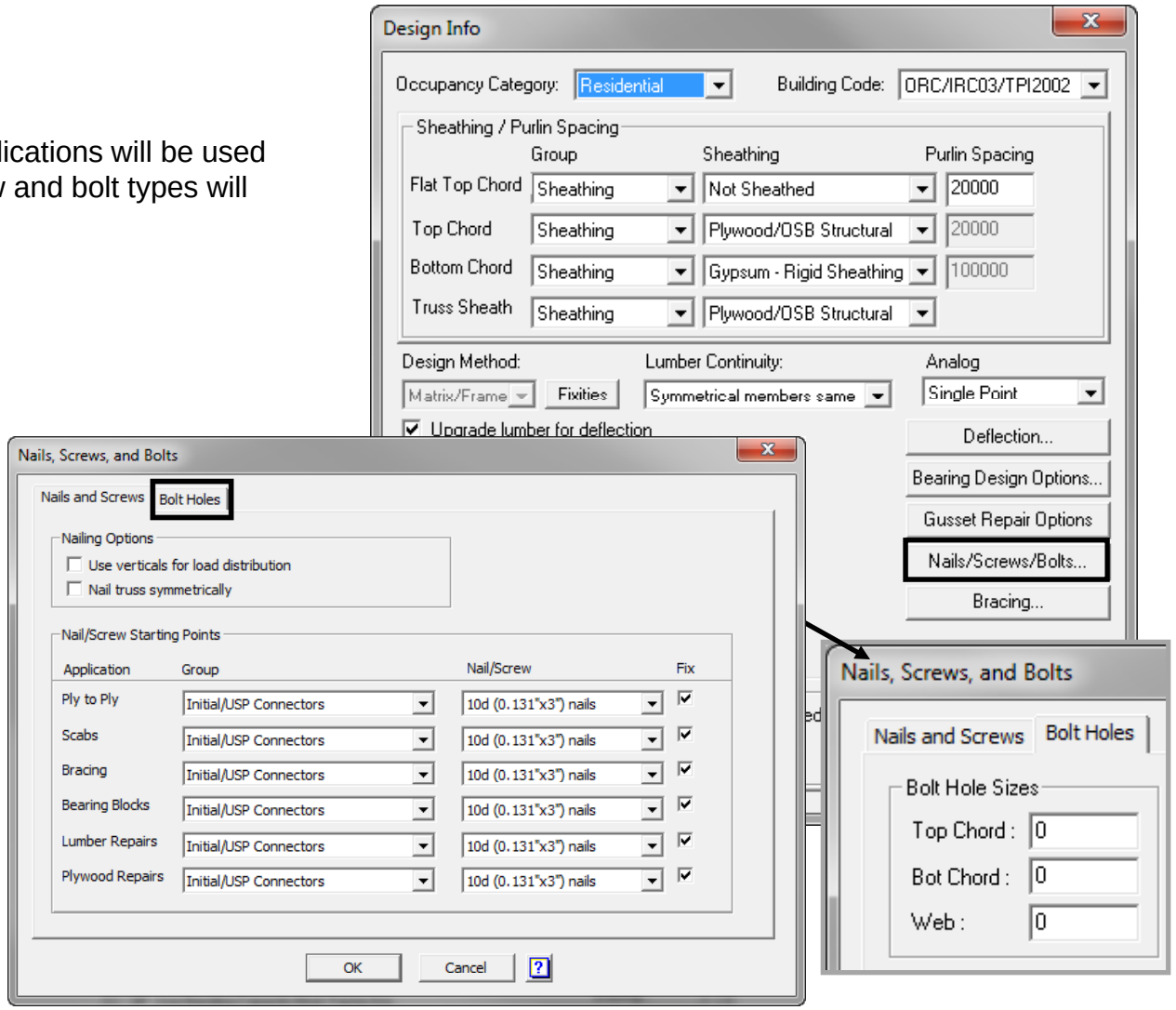
Allows the user to specify which applications will be used for repairs and also which nail, screw and bolt types will be available for repairs.

Nailing Options:

- **Use Verticals for Load Distribution –** Allows the verticals to be nailed to handle load distribution.

Nail Truss Symmetrically – This option will nail the truss symmetrically based on the worst case scenario.

NOTE: If a box is checked, only that material will be tried. If unchecked, the program will try other combinations.



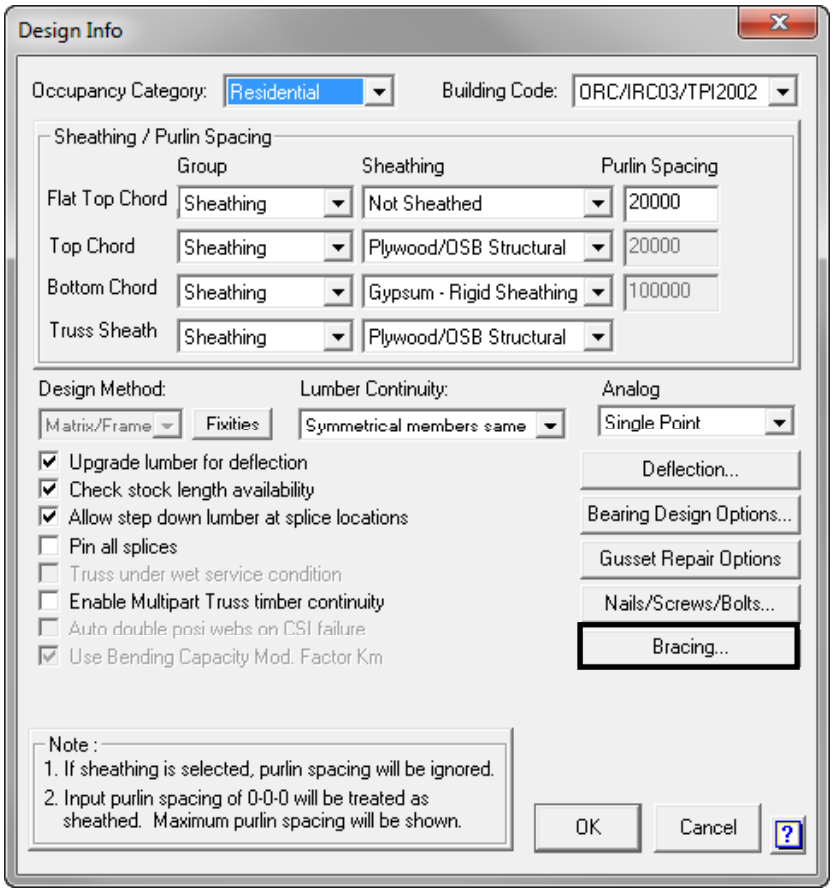
Design Info

Bracing

Bracing Options allows the user to specify the type of bracing to be used.

This information may be modified at any time.

See the following pages for details.



Design Info

Bracing (cont)

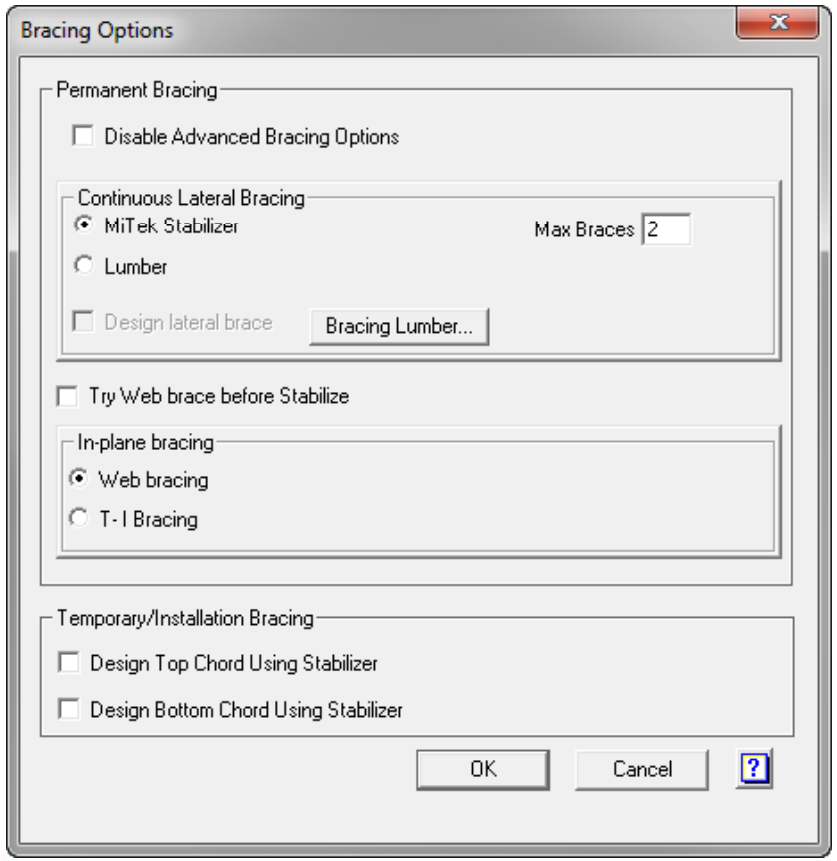
Disable Advanced Bracing Options:

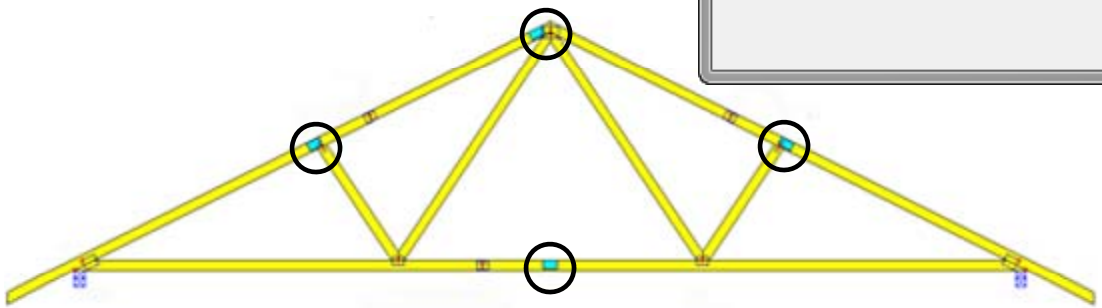
- **Checked -** Only uses lumber as Lateral bracing material.
- **Unchecked -** Advanced bracing features are available.

MiTek Stabilizer: The program will use MiTek Stabilizer® as Continuous Lateral Bracing.

Max Braces: The maximum number of braces the program will use before upgrading the members size and/or grade. This field is set to 2 by default.

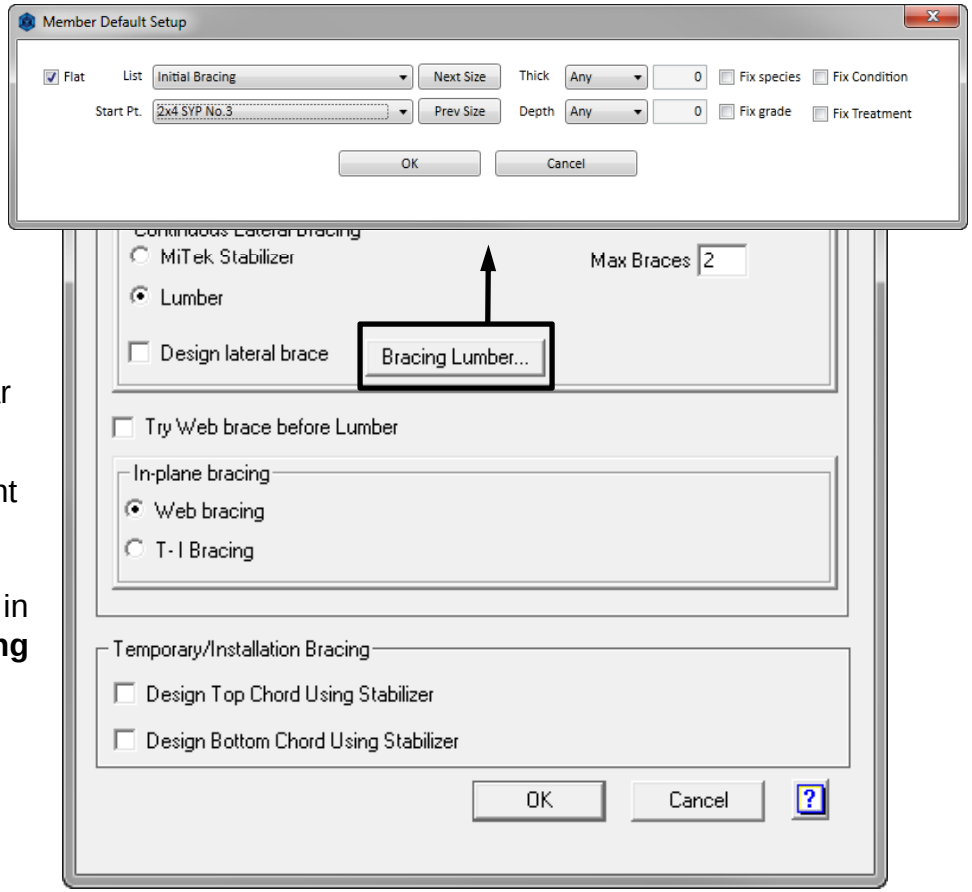
Lumber: Allows the user to specify lumber as the Lateral Bracing type.





Design Info

Bracing (cont)



Selecting the **Lumber** radio button activates the **Design Lateral Bracing** option.

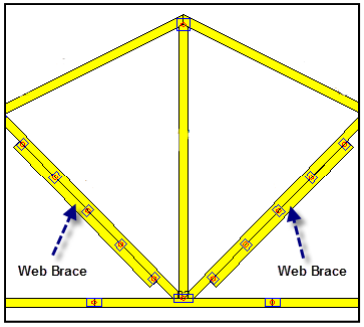
Design Lateral Bracing: This option performs the same as standard lumber bracing, but with one exception. When the bracing is inadequate, the **Review Required** note will appear on the Engineering Drawing.

Bracing Lumber: Allows the user to specify the starting point for lumber to be used for lateral bracing.

NOTE: To use this option, **Initial Bracing** must be available in **Setup > Manufacturer > Materials > Material List > Bracing**

Design Info

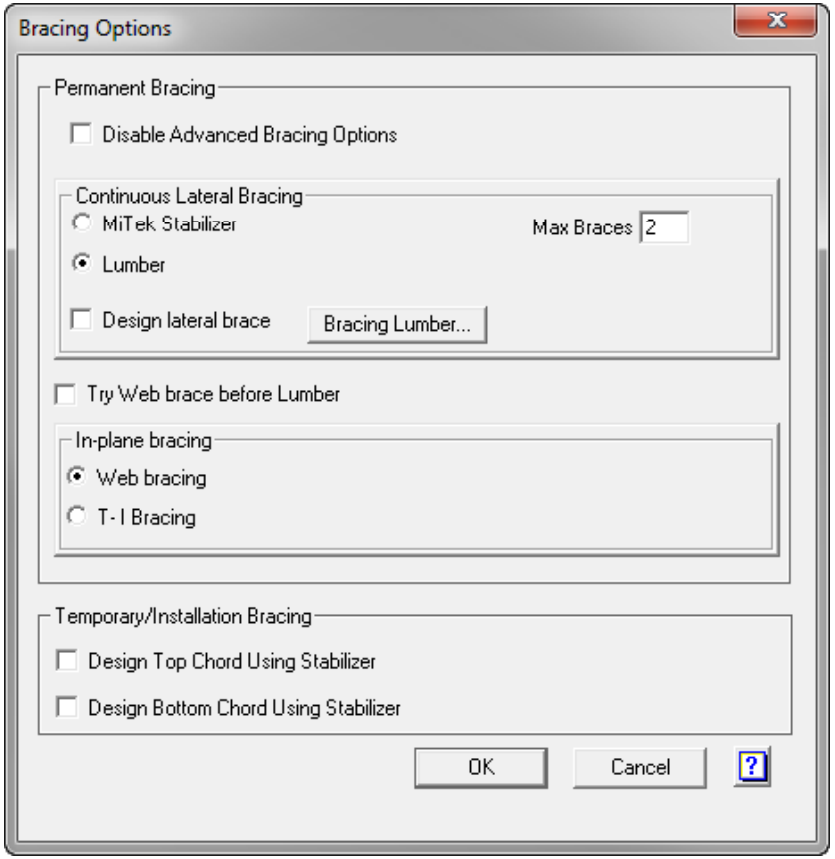
Bracing (cont)



Web Brace:
A shop applied brace that does not Interfere with truss stacking.

Checking this option will gray out T-I Bracing.

T – I Bracing: This option is required for trusses that do not meet Repetitive Stress criteria. This will place, when required, one brace (T) or two braces (I) one on each web edge. See **Repetitive Stress** criteria below.



Rep Stress - This is used for loading when there are three trusses side by side. Loading on the center truss is supported by the other two trusses With Repetitive Stress on in truss basics, the program will add a 15% increase in bending (Fb) for similar member lumber only if the truss meets these requirements:

- There must be 3 or more trusses positioned side by side, in contact and with a matching web pattern or
- The on center space of these trusses must be 2 ft OC or less and they are joined by roof sheathing, flooring, gypsum or other load distributing elements attached directly to the chord.

Loading - General Tab

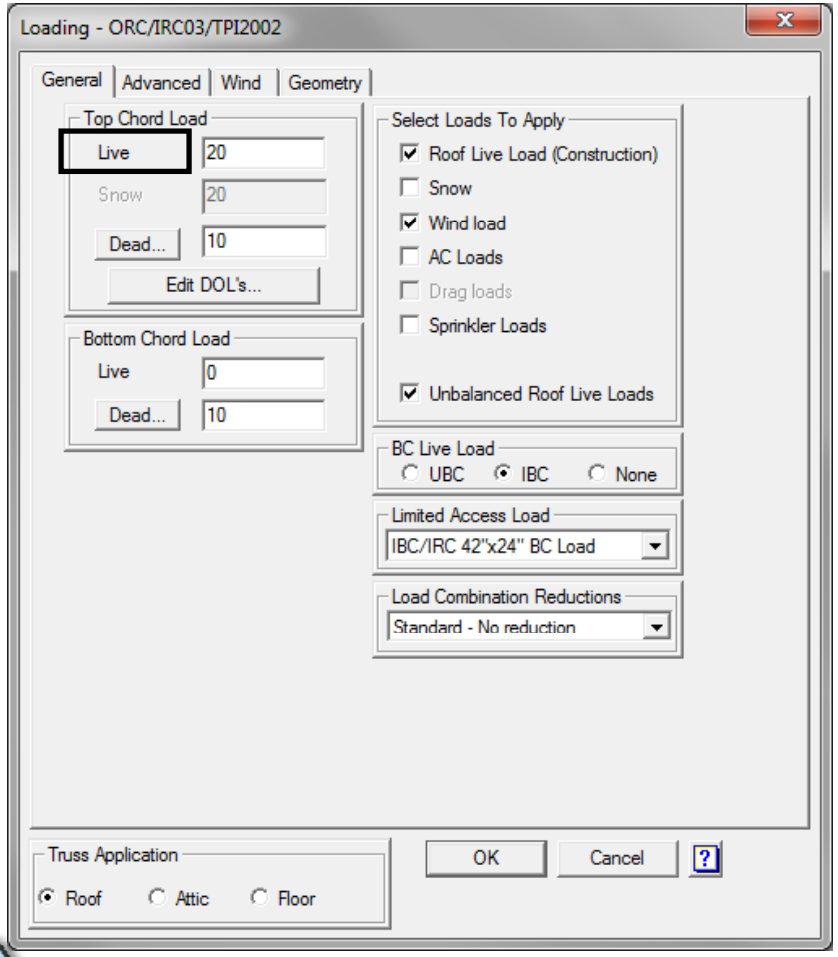
Live Loads

Live Loads: The loads superimposed by the use and occupancy of the building or other structure including impact, but not including dead load or environmental loads such as wind load, snow load or earthquake load.

- Not permanent
- Loads cycle on and off the structure

Common Live Loads:

- Occupancy
- Construction
- People
- Attic storage loads
- Suspended hydraulic presses
- Moving cranes



NOTE: In the absence of a governing building code, the minimum uniformly distributed live loads or concentrated loads in ANSI/ASCE 7-05 shall be used.

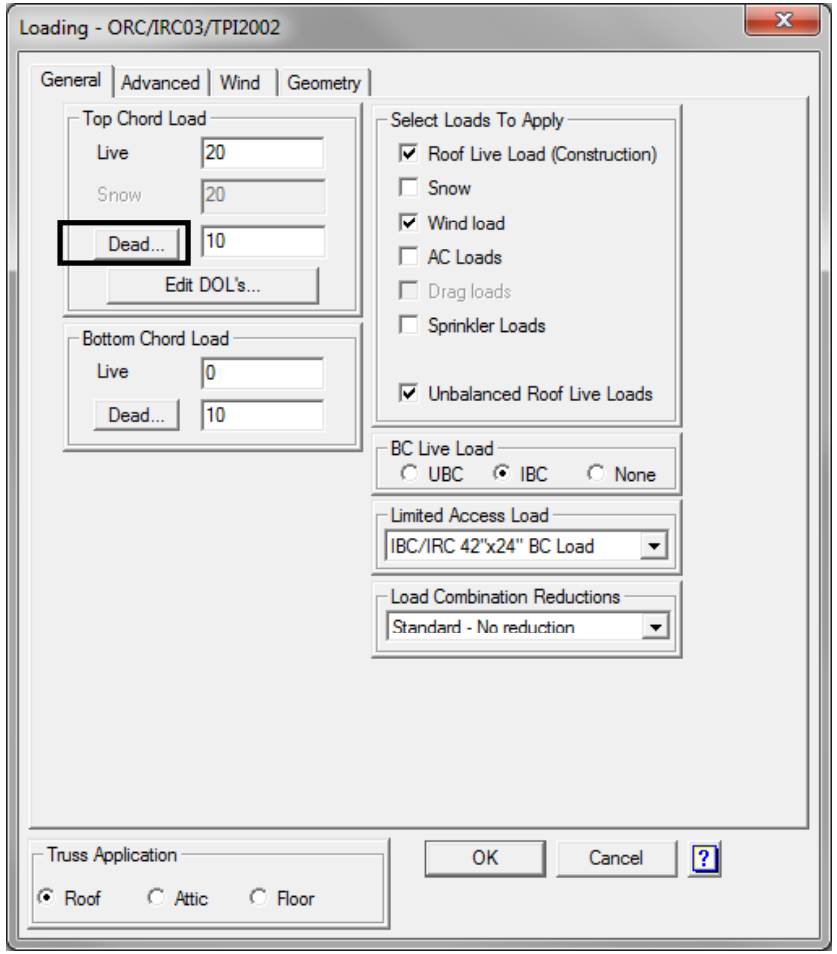
Loading - General Tab

Dead Loads

Dead Loads: The gravity loads due to all permanent structural and nonstructural components of a structure such as lumber, walls, floors, roofs, partitions, stairways and fixed service equipment

Common Dead Loads:

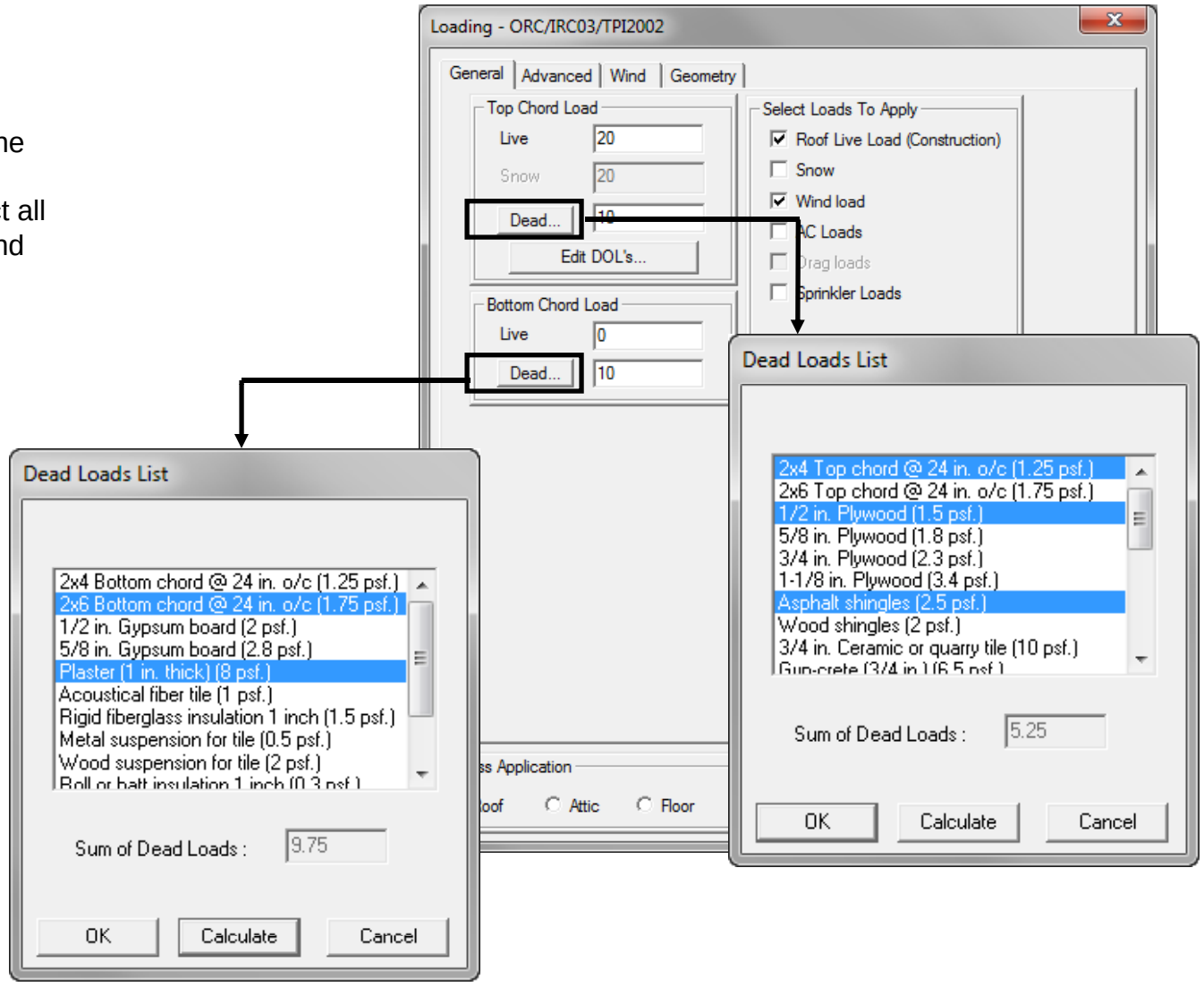
- Drywall
- Roof sheathing and shingles
- Truss weight
- Sub-flooring
- HVAC units
- Lighting fixtures
- Sprinkler systems



Loading - General Tab

Dead Loads (cont)

To calculate **Dead Load**, click the **Dead…** button, for either **Top Chord** or **Bottom Chord**, select all items that pertain to that load and click Calculate to display the **Sum of Dead Loads**.



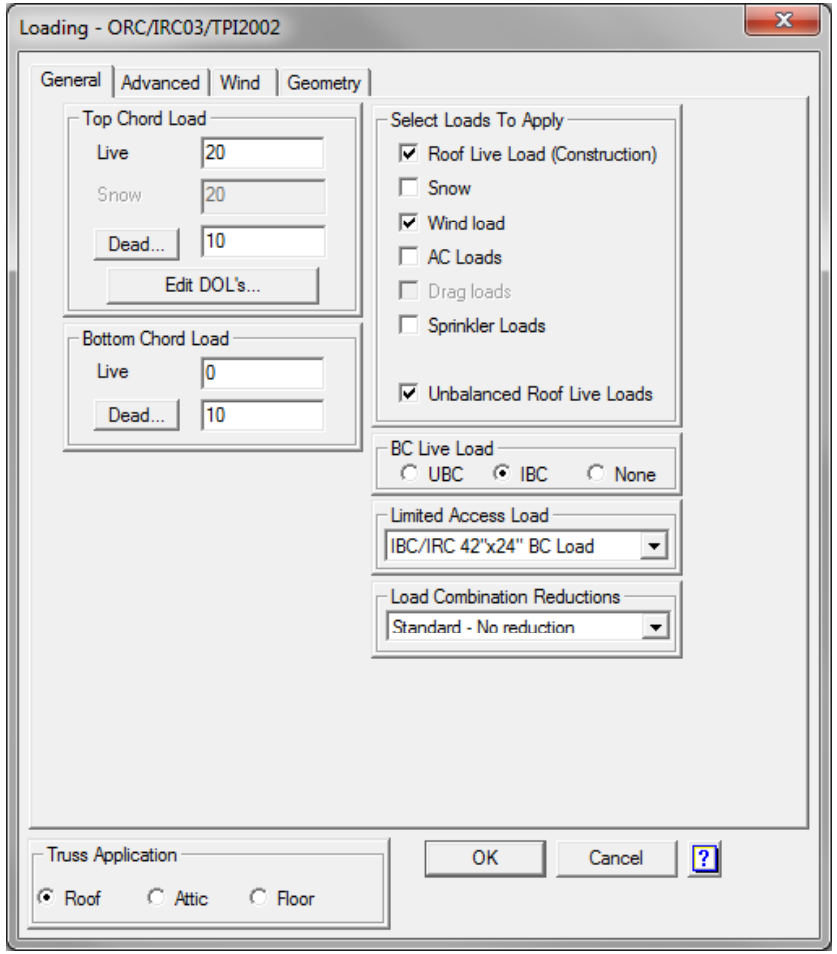
Loading - General Tab

Information

Environmental Loads: The loads directly resulting from the effects of the environment on the structure

Common Environmental Loads:

- Snow and Ice
  - Including drift loads
    - Are gravity loads
    - Act vertically
- Wind
  - Pressure loads
    - Act perpendicular to a surface
- Earthquake (seismic)
  - Similar to wind loads



Loading - General Tab

Information (cont)

Who determines design loads:

- The national and local building code agencies
- ANSI/ASCE 7-05 Minimum Design Loads for buildings and other structures
- Engineering Judgement

Engineering Judgement:

- Use of code requirements is not a substitute for sound engineering judgement.
- When to use engineering judgement.
  - ✓ Always
  - ✓ For cases not covered by the codes
  - ✓ For situations in conflict with the codes
  - ✓ Always call your engineering office when in doubt

NOTE: In the absence of a governing building code, the minimum uniformly Distributed live loads or concentrated loads in ANSI/ASCE 7-05 shall be used.

Loading - General Tab

Information (cont)

IRC (International Residential Code): Defined as the code used for one and two family dwellings

IBC (International Building Codes): Defined as the code used for everything other than residential.

NOTE: ASCE must be modified when the codes change and therefore stays just behind the new code.

- Use ASCE 7-08 with IRC2000 or IBC2000
- Use ASCE 7-02 with IRC2003 or IBC2003
- Use ASCE 7-05 with IRC2006 or IBC2006

Loading - General Tab

Information (cont)

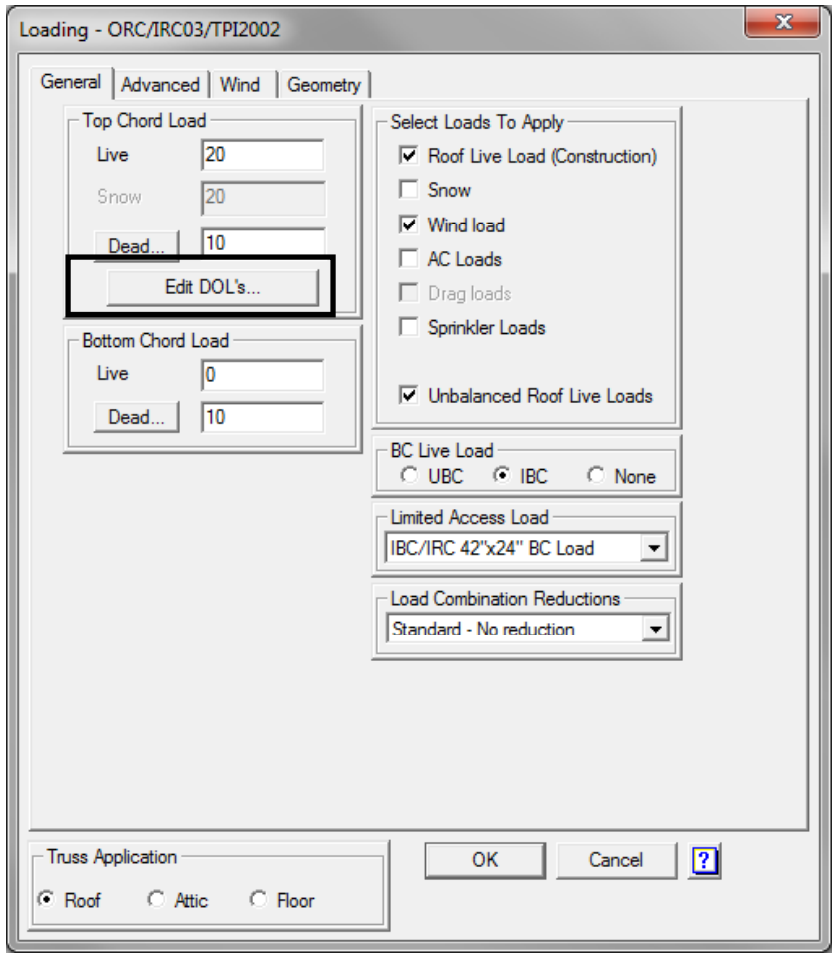
Load vs time characteristics of wood

- Wood strength properties are dependant on rate of loading
- Ultimate strengths are higher if loading is rapidly applied
  - Wood will resist higher loads for a very short period of time
  - Wood will resist lower loads for a very long period of time
- Normal Duration
  - Considered to be a 10 year duration. The relationship between bending ultimate strength due to short term laboratory tests and due to longer loading time periods allow us to adjust the design values, and lead us to this conclusion:
  - "What makes wood such a useful building material, is its ability to sustain a heavy load for a short period of time. For example: the same piece of lumber has a 60% greater load capacity for a 10 minute duration , 25% greater capacity for a 7 day duration, and 15% greater capacity for a 2 month duration than it has for a 10 year load duration."

Loading - General Tab

Edit DOL's

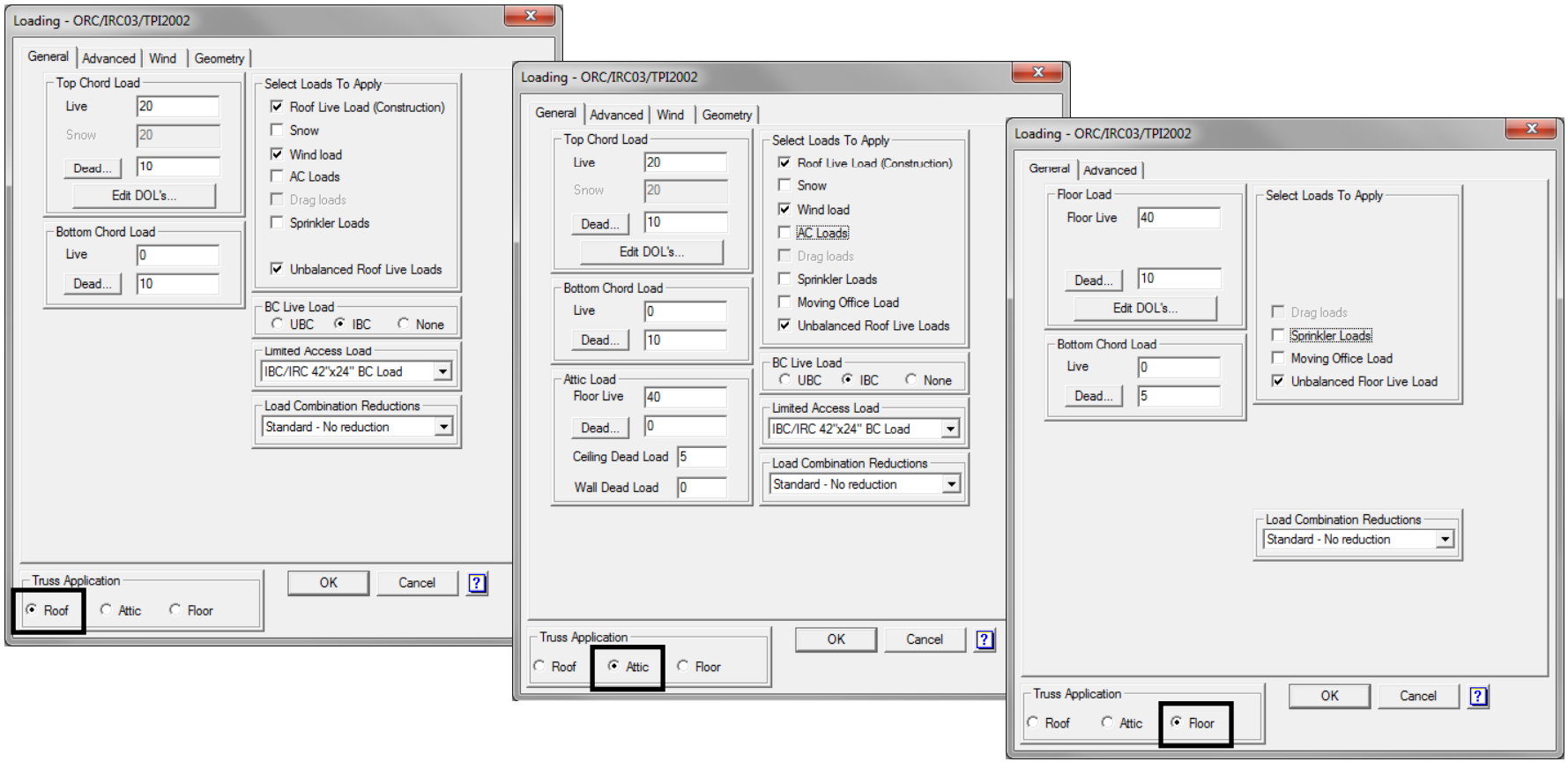
Type of load	Load Duration Factor
Permanent	0.90
Floor	1.00
Snow	1.15
Construction	1.25
Wind/earthquake	1.33
Wind (gusts)	1.60
Impact	2.00



Loading - General Tab

Truss Application

Changing the Truss Application will automatically adjust the available options.



Loading - General Tab

Select Loads To Apply

Each item, when checked, will activate a tab for setting defaults.

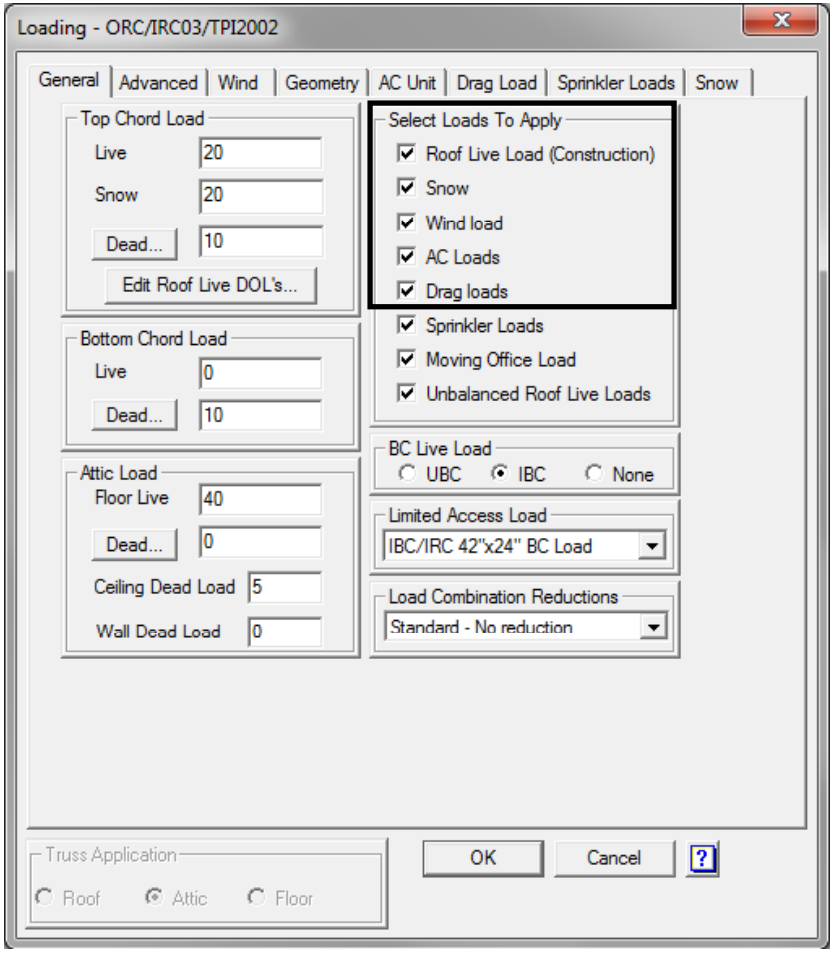
Roof Live Load (Construction) - These are loads associated with live loads such as pallets of shingles or other building materials and the weight of workers on the roof.

Snow – These are loads associated with environment loads such as snow, snow drifts and ice.

Wind Load - These are loads associated with live loads from wind.

AC Loads - These are loads associated with dead loads from an AC unit mounted in the truss or on the roof.

Drag Loads - These are loads associated with live loads from seismic events.



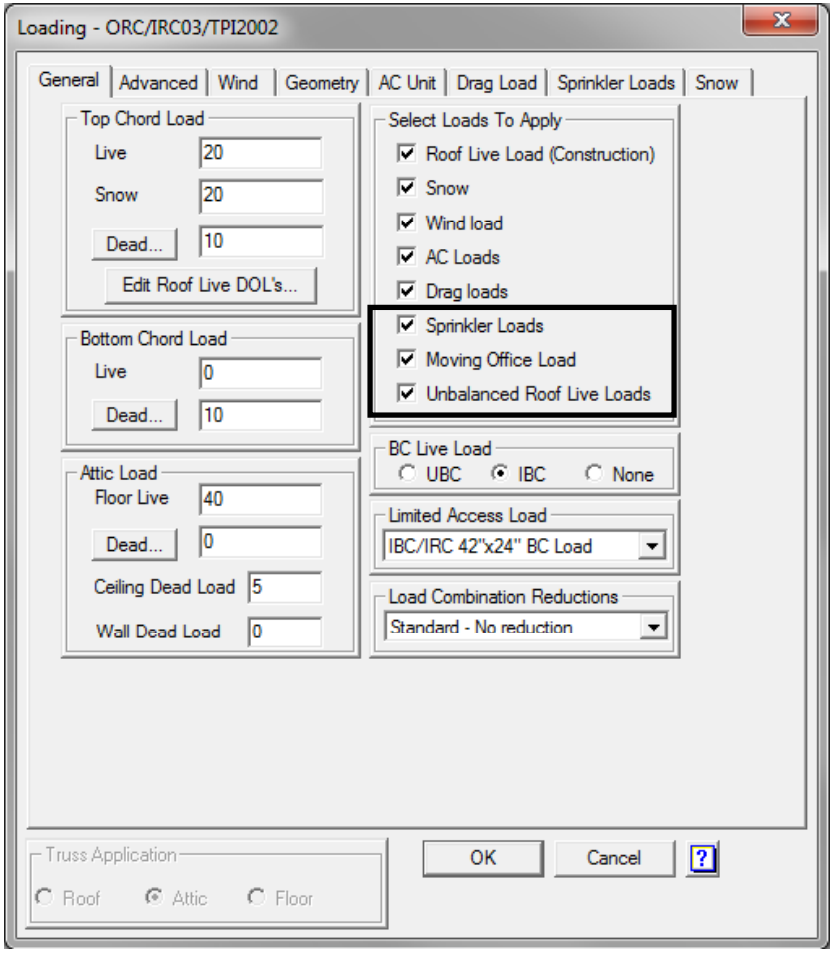
Loading - General Tab

Select Loads To Apply (cont)

Sprinkler Loads - These are loads associated with live and dead loads from a sprinkler system. These settings can also be used to set up a scuttle load.

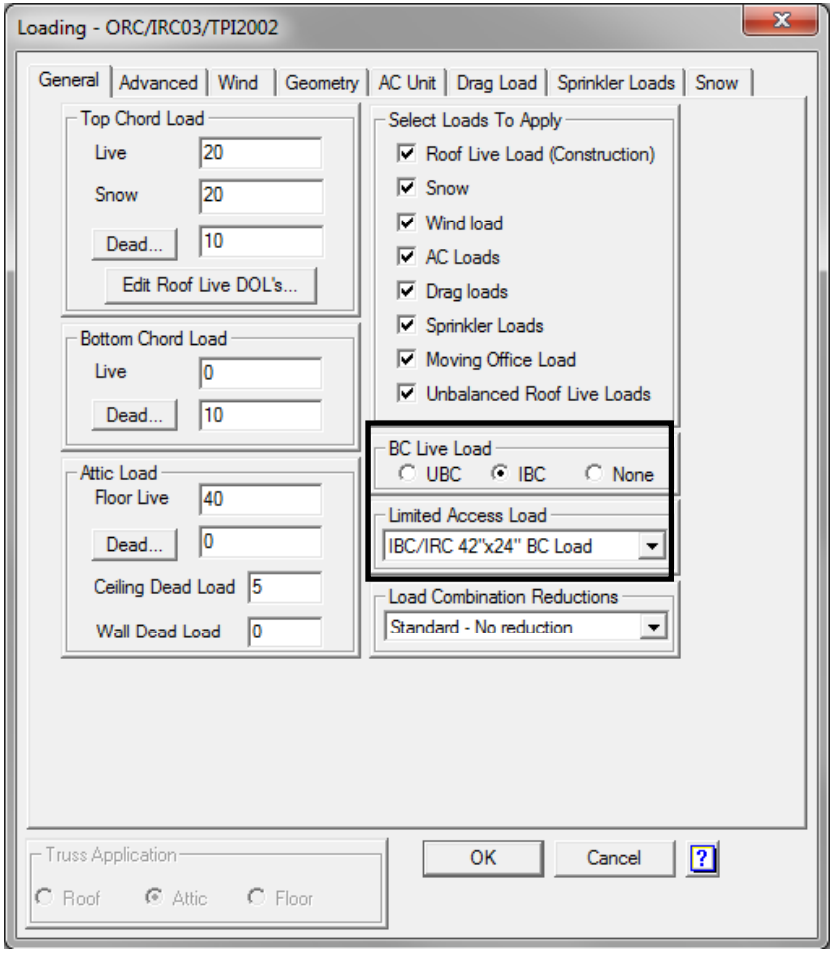
Moving Office Loads - These are loads associated with furnishings that may change location.

Unbalanced Roof Live Loads - These loads are loads associated with the snow load and will add load cases for unbalanced snow conditions.



Loading - General Tab

Other Loads



BC Live Load
should be selected based on **UBC** or **IBC** building code or select **None** if not needed.

Limited Access Load
Limited access loads are based on the opening size of the webs of the truss. These options add live load to the bottom chord of the truss because of the potential for storage.

Available options are:

- **No Limited Access Load –** Disables Limited Access Loads and does not apply live load to the bottom chord.
- **Boca 42inches BC Load –** This option adds the Boca loading criteria for load value, minimum height and minimum width panels.
- **Carolina 6' BC Load**
  This option adds the Carolina loading criteria for load value, minimum height and minimum width panels.
- **IBC/IRC 42"x24" BC Load**
  This option adds the International Building Code/International Residential Code loading criteria for load value, minimum height and minimum width panels.

Loading - General Tab

Limited Access Load

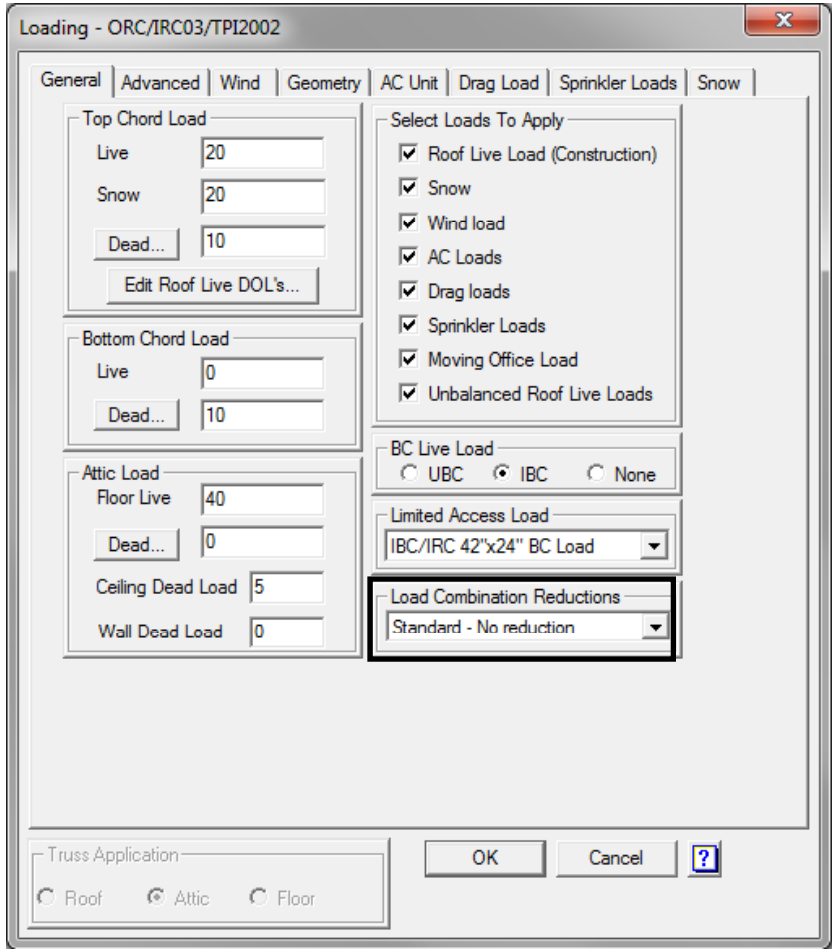
Load Combination Reductions :

Standard – No reduction - No action is taken and loads remain as they are.

Multiple Live Load Reduction - When this option is chosen, each live load will be multiplied by 0.75 in every load case where two or more live loads are present.

Two additional options are:

- Multiple LL Red. (Wind + Live)
- Multiple LL Red. (all combinations)



NOTE: The following pages will show each Limited Access Load window.

Loading - Advanced Tab

Limited Access Load (cont)

Each of the options has a check box for **Follow Building Code.**

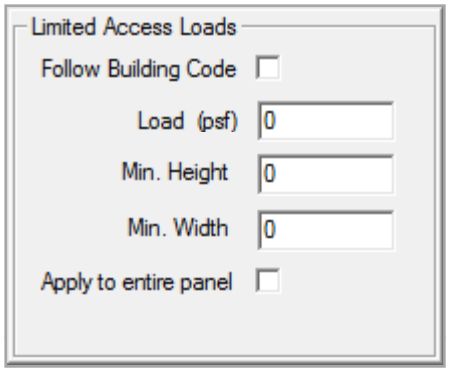
Checked – Enters the values for the code selected.

Unchecked – Allows the user to enter values as needed.

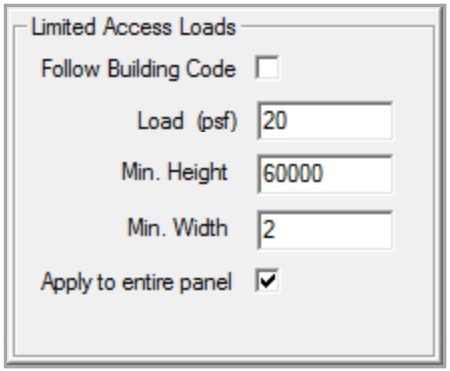
NOTE: Please contact MiTek Engineering with questions about these values

When the Attic or Floor Truss Application is selected, Moving Office Load becomes visible and functions the same as those listed above.

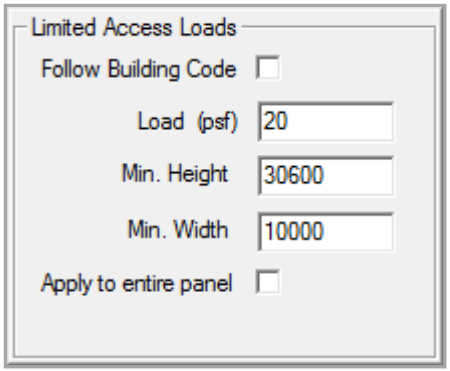
No Limited Access Load



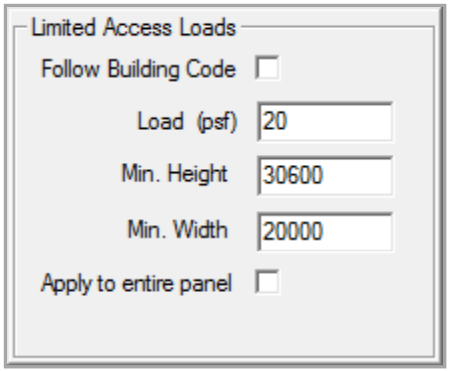
Carolina 6' BC Load



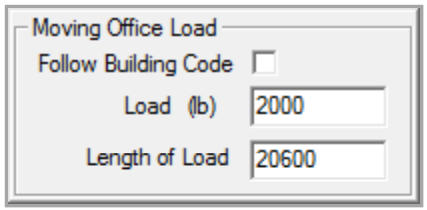
Boca 42inches BC Load



IBC / IRC 42"x24" BC Load



Moving Office Load



Loading - Advanced Tab

Limited Access Load (cont)

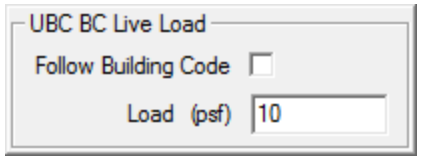
Each of the options has a check box for **Follow Building Code.**

Checked – Enters the values for the code selected.

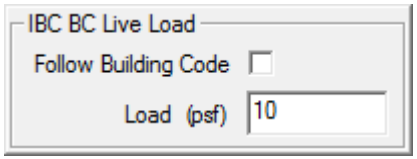
Unchecked – Allows the user to enter values as needed.

NOTE: Please contact MiTek Engineering with questions about these values

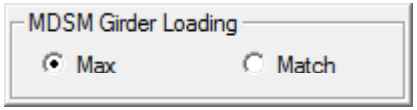
BC Live Load - UBC



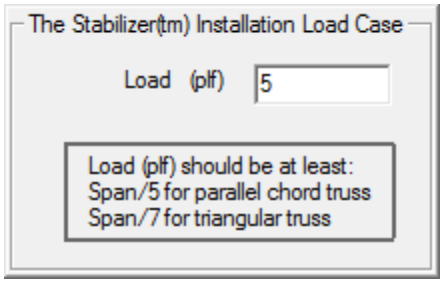
BC Live Load - IBC



MDSM Girder Loading

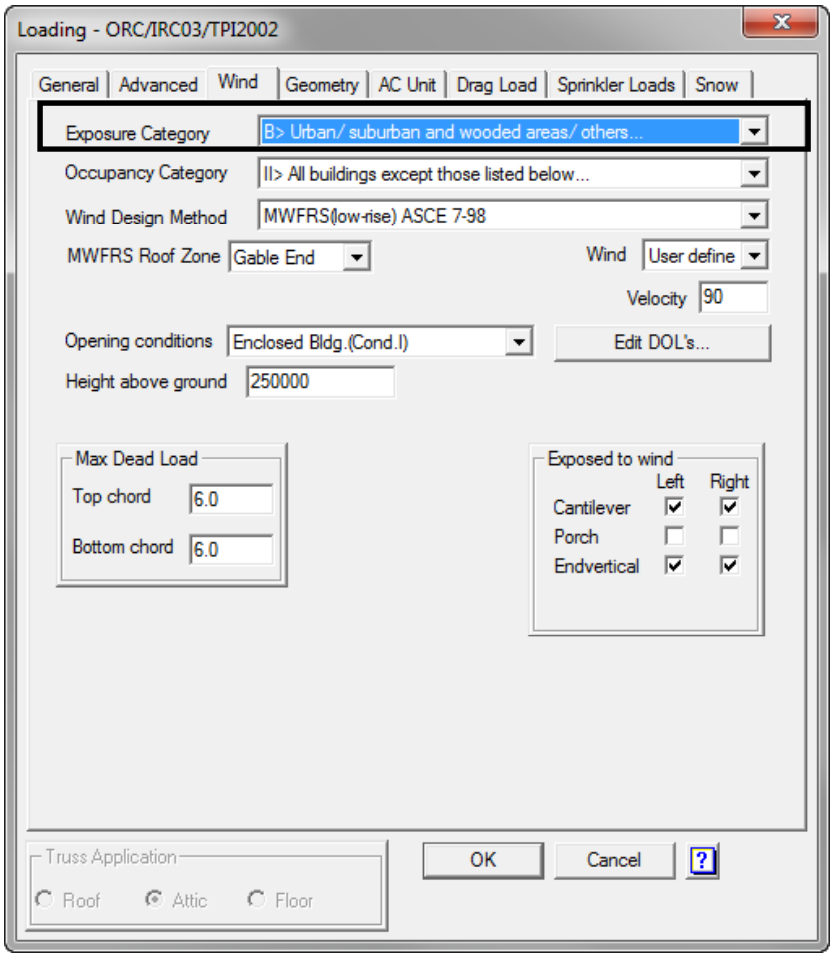


Stabilizer Installation



Loading - Wind Tab

Exposure Category



Use the drop-down list box to select the Exposure Category for the area where the trusses will be placed. The choices are *A* through *D*. Contact the MiTek Engineering department if in doubt which category to use for your area.
Each category is explained as follows:

Exposure A **-** Large city centers with at least 50% of the buildings having a height in excess of 70 feet. Use of this exposure category shall be limited to those areas for which terrain representative of Exposure A prevails in the upwind direction for a distance of at least one-half mile or 10 times the height of the building or structure, whichever is greater.

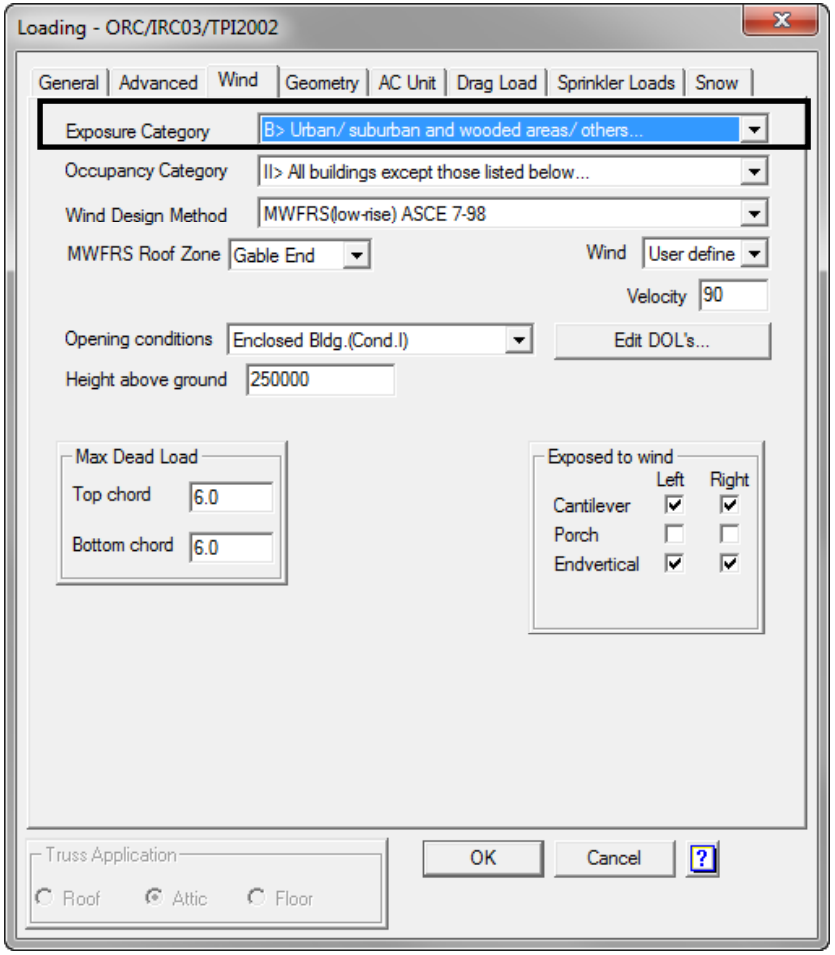
Exposure B **-** Urban and suburban areas, wooded areas, or other terrain with numerous closely spaced obstructions having the size of single-family dwellings or larger. Use of this exposure category shall be limited to those areas for which terrain representative of Exposure B prevails in the upwind direction for a distance of at least 1500 feet or 10 times the height of the building or structure, whichever is greater.

Loading - Wind Tab

Exposure Category (cont)

Exposure C **-** Open terrain with scattered obstructions having heights generally less than 30 feet. This category includes flat open country and grasslands.

Exposure D **-** Flat, unobstructed areas exposed to wind flowing over large bodies of water. This exposure shall apply only to those buildings and other structures exposed to the wind coming from over the water. Exposure D extends inland from the shoreline a distance of 1500 feet or 10 times the height of the building or structure, whichever is greater.



Loading - Wind Tab

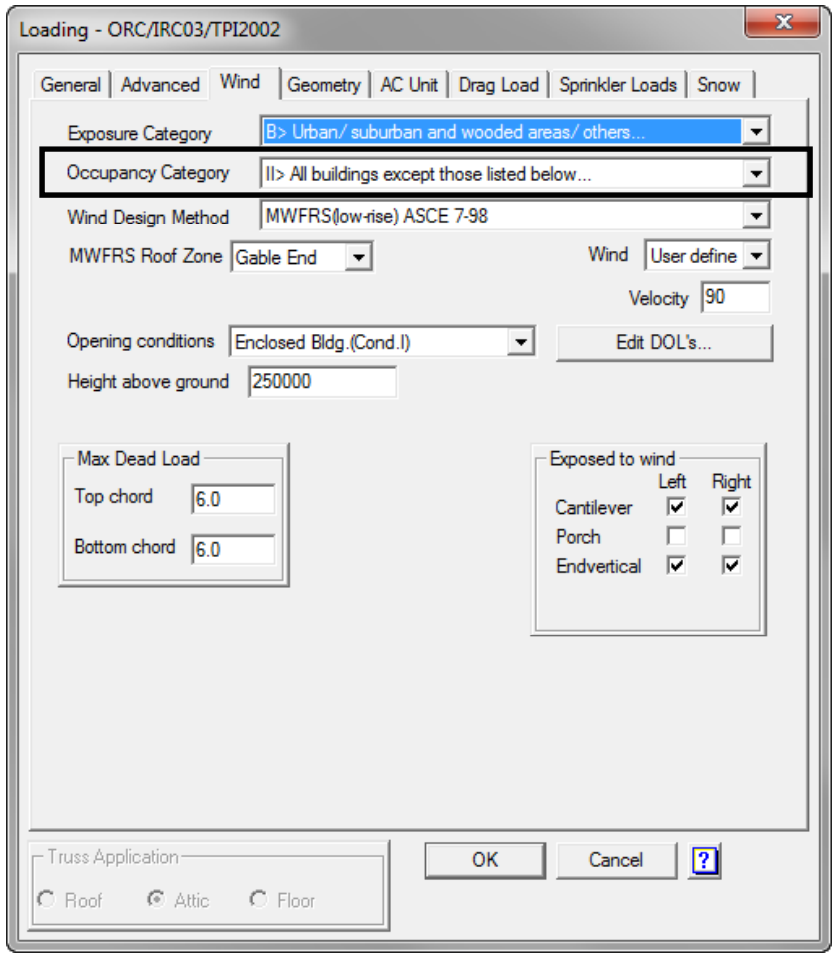
Occupancy Category

Select the appropriate **Occupancy Category** from the drop-down list box. Consult the MiTek engineering department if you're not sure which category is appropriate for your situation. There are four choices. Each is explained as follows:

Category I - Buildings and structures that represent a low hazard to human life in the event of failure, such as agricultural buildings, certain temporary facilities, and minor storage facilities.

Category II - (***Suggested Default***) All buildings and structures except those listed below.

Category III - Buildings and structures where the primary occupancy is one in which more than 300 people congregate in one area.

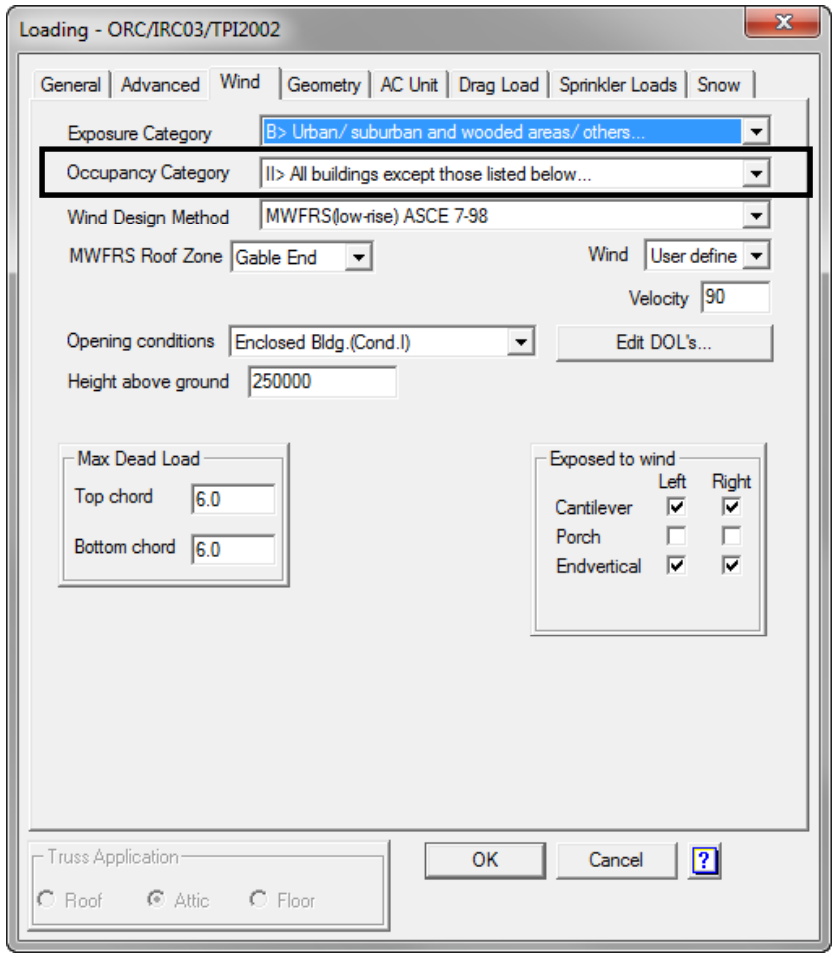


Loading - Wind Tab

Occupancy Category (cont)

Category IV - Buildings and structures designated as essential facilities, including, but not limited to:

- Hospital and other medical facilities having surgery or emergency treatment areas.
- Fire or rescue and police stations.
- Structures and equipment in government communication centers and other facilities required for emergency response.
- Power stations and other utilities required in an emergency.
- Structures having critical national defense capabilities.
- Designated shelters for hurricanes.

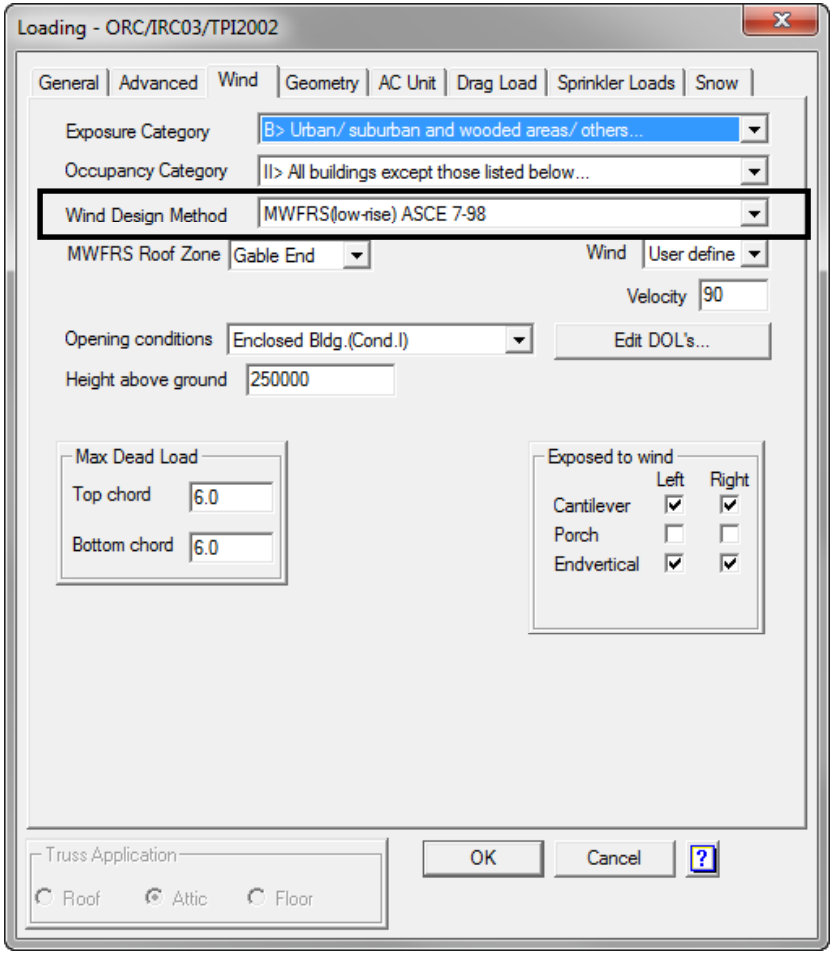


Loading - Wind Tab

Wind Design Method

Components & Cladding – (C&C) Components receive wind loads directly or from cladding and transfer the load to the main wind force-resisting system. Cladding receives wind loads directly. Examples of components include fasteners, purlins, girts, studs, roof decking, and roof trusses. Examples of cladding include wall coverings, curtain walls, roof coverings, exterior windows (fixed and operable) and doors, and overhead doors. Components can be part of the main wind force-resisting system when they act as shear walls or roof diaphragms, but they may also be loaded as individual components.

Main Wind-force Resisting System - (MWFRS) is the assemblage of major structural elements assigned to provide support for cladding and secondary members like sheathing and purlins. The main wind-force resisting system receives wind loading primarily from relatively remote locations. Structural elements such as cross-bracing, shear walls, roof trusses, and roof diaphragms are part of the main wind-force resisting system when they assist in transferring overall loads.



Loading - Wind Tab

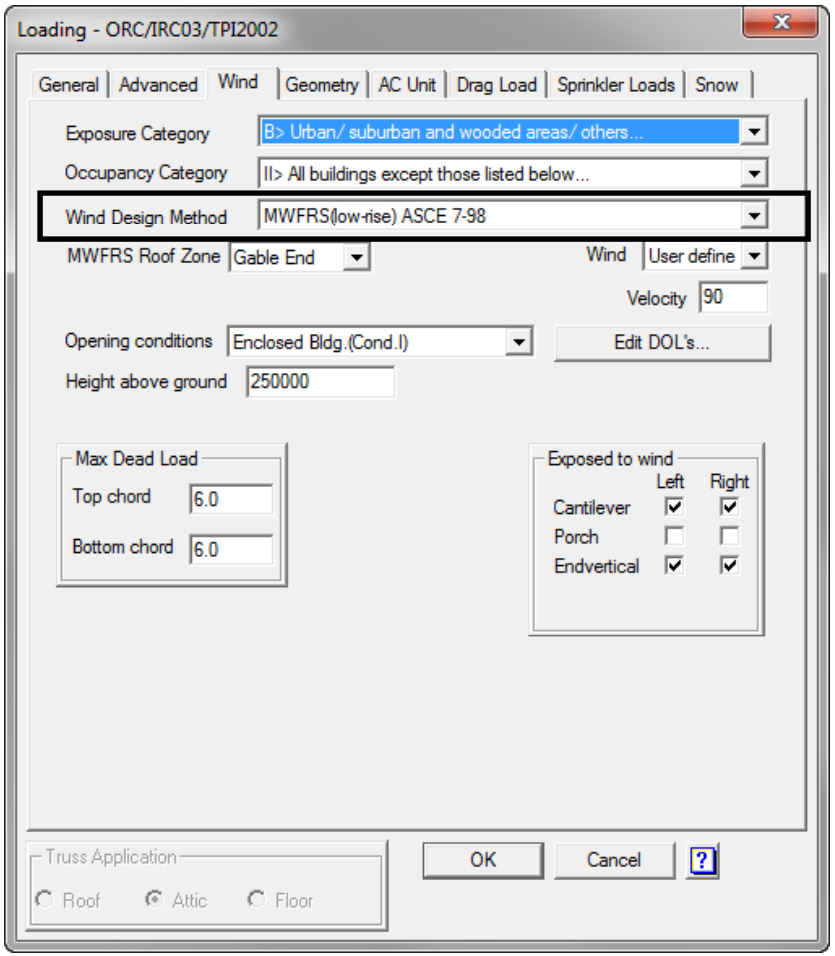
Wind Design Method (cont)

Select the appropriate **Wind Design Method**. There are four choices and each is explained as follows.

Components And Cladding - Structural elements that are either directly loaded by the wind or receive wind loads originating at relatively close locations and that transfer those loads to the main wind-force resisting system. Examples include curtain walls, exterior glass windows and panels, roof sheathing, purlins and studs.

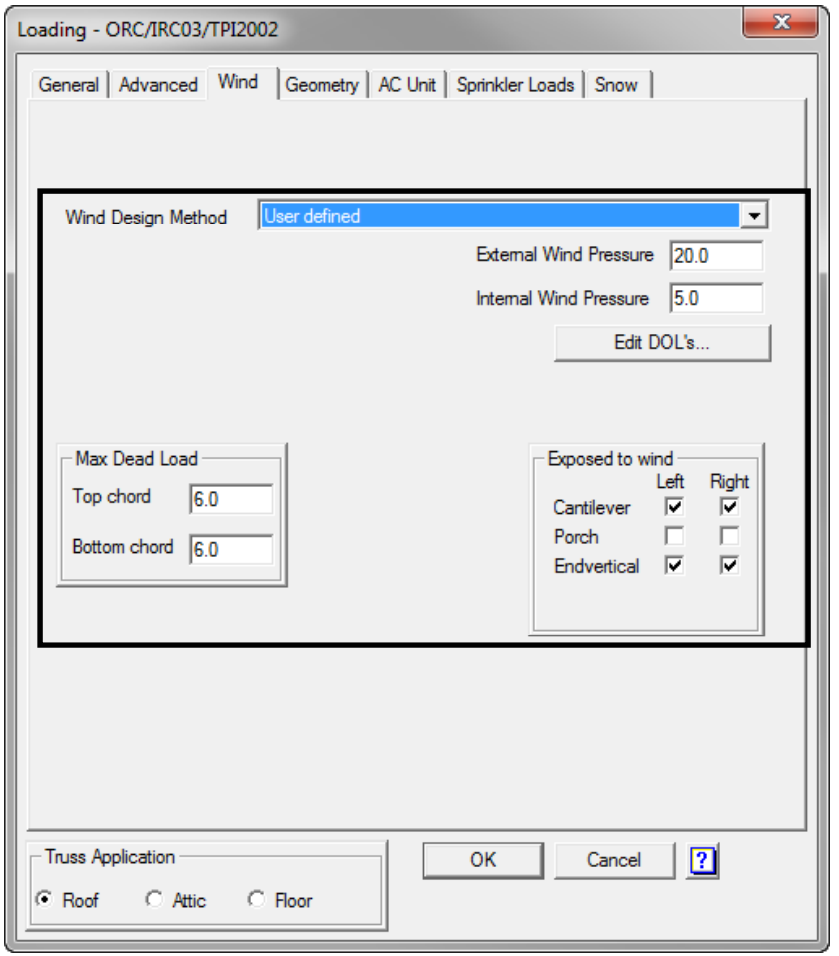
Main Wind-Force Resisting System - An assemblage of major structural elements assigned to provide support for secondary members and cladding. The system primarily receives wind loading from relatively remote locations. Examples include rigid and braced frames, space trusses, roof and floor diaphragms, shear walls, and rod-braced frames.

Hybrid - Allows the user to run both CC and MWFRS load cases, and designs members and plates for all Load cases. When using this method it reports MWFRS uplift Reactions and references CC wind in the notes section of the engineering drawing. All load cases are still run for both methods.



Loading - Wind Tab

Wind Design Method (cont)



When the **Wind Design Method** is set to **User Define**, the window will change for the user to enter their criteria.

This allows the user to set the **External** and **Internal Wind Pressures** manually. This may be useful where pressures were specified by the project designer or engineer.

Edit DOL's – Duration of Load can be adjusted at this window.

Max Dead Load – Top and **Bottom** chord dead loads may be adjusted here. The entered loads should not be heavier than the normal dead loads

Exposure to Wind – Allows the user to specify wind application to Cantilevers, Porches and End Verticals.

- **Cantilever** – Remains checked and will only apply Wind when a cantilevers is present.
- **Porch –** When checked, wind will be applied to the bottom chord between the first and second bearing from the end selected. **NOTE:** Do not check this option until a porch condition is present.
- **Endvertical –** Remains checked and will only apply wind when there is an end vertical present.

Loading - Wind Tab

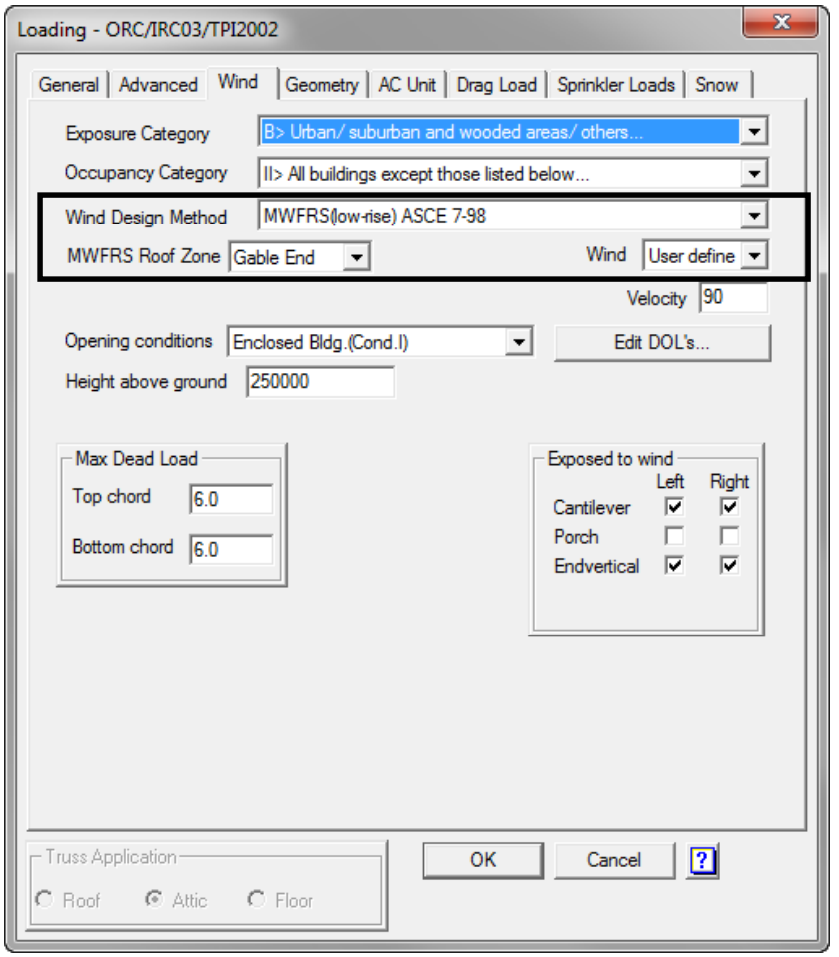
Wind Design Method (cont)

Main Wind Force Resisting System (MWFRS) - When selected, the **MWFRS Roof Zone** options are **Interior** and **Gable End**

Components / Cladding – When selected, the **C-C Roof Zone** options are **Interior (1)**, **Exterior (2)**, **Corner (3)**, and **Automatic**.

Wind – The available options are;

- **User Defined –** Allows the user to enter the Velocity required.
- **Hurricane –** Locks the Velocity at 120 mph.
- **High –** Locks the Velocity at 100 mph
- **Medium -** Locks the Velocity at 80 mph
- **Slow -** Locks the Velocity at 70 mph



Loading - Wind Tab

Opening Conditions

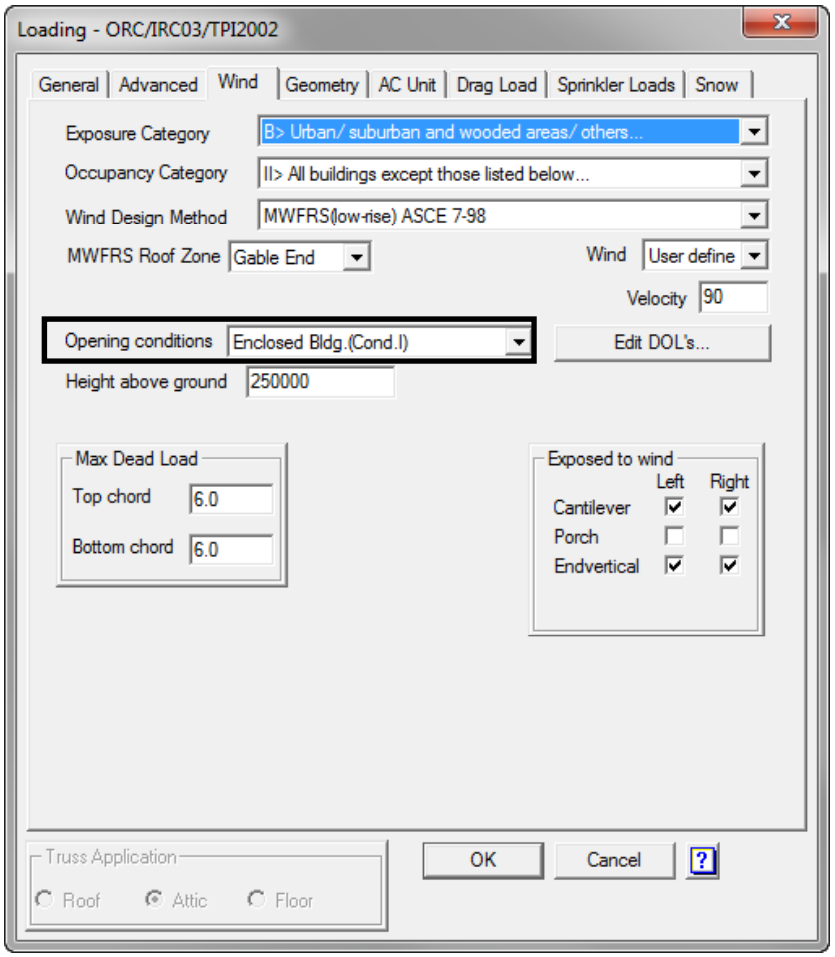
Opening Conditions - There are three conditions to choose from. They refer to the internal pressure coefficients for the building. They are:

Enclosed Bldg (Cond. I) - All conditions except as noted under Condition II.

Partially Enclosed (Cond. II) - Buildings in which both of the following are met:
The percentage of openings in one wall exceeds the sum of the percentages of openings in the remaining walls and roof surfaces by 5% or more, and the percentage of openings in any one of the remaining walls or roof do not exceed 20%.

Open Bldg (Cond. III) – Applies less wind to the bottom chord. This option is only available when using the following three Wind Design Methods.

- MWFRS(all heights) ASCE 7-05
- MWFRS(all heights)/C-C hybrid Wind ASCE 7-05
- Components/Cladding ASCE 7-05



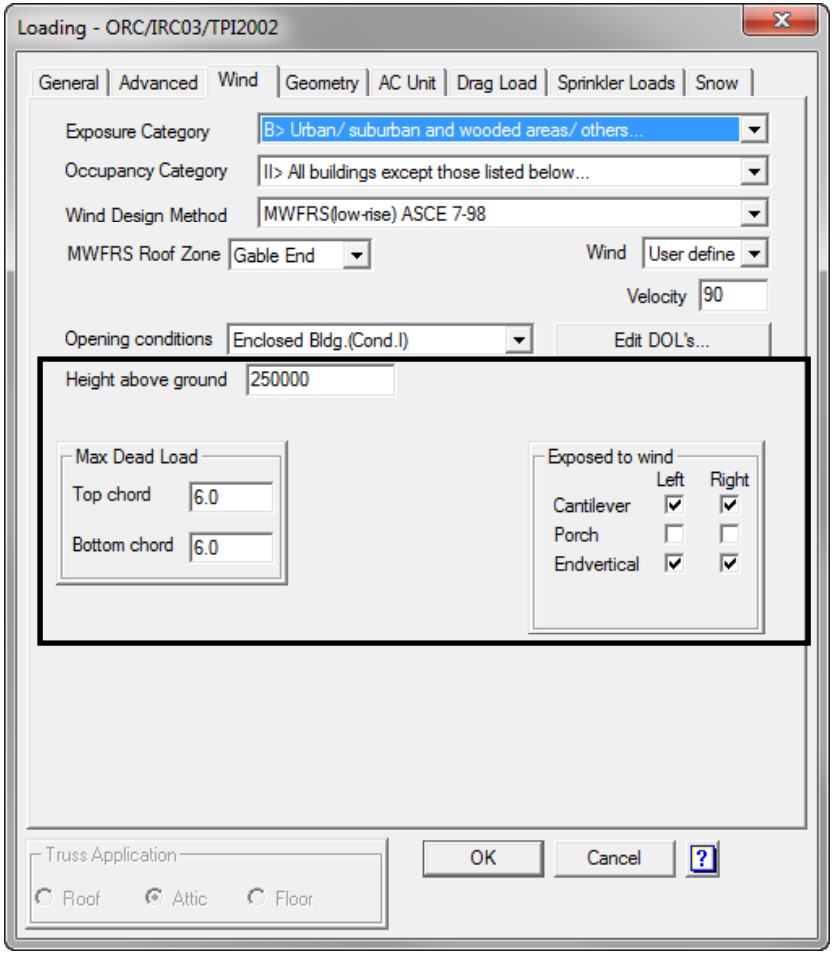
Loading - Wind Tab

Opening Conditions

Height Above Ground - See the notation in the previous **Roof Zone** section.

Max Dead Load - **Top** and **Bottom** chord dead loads may be adjusted here. The entered loads should not be heavier than the normal dead loads

Exposed To Wind – Same as discussed on previous pages

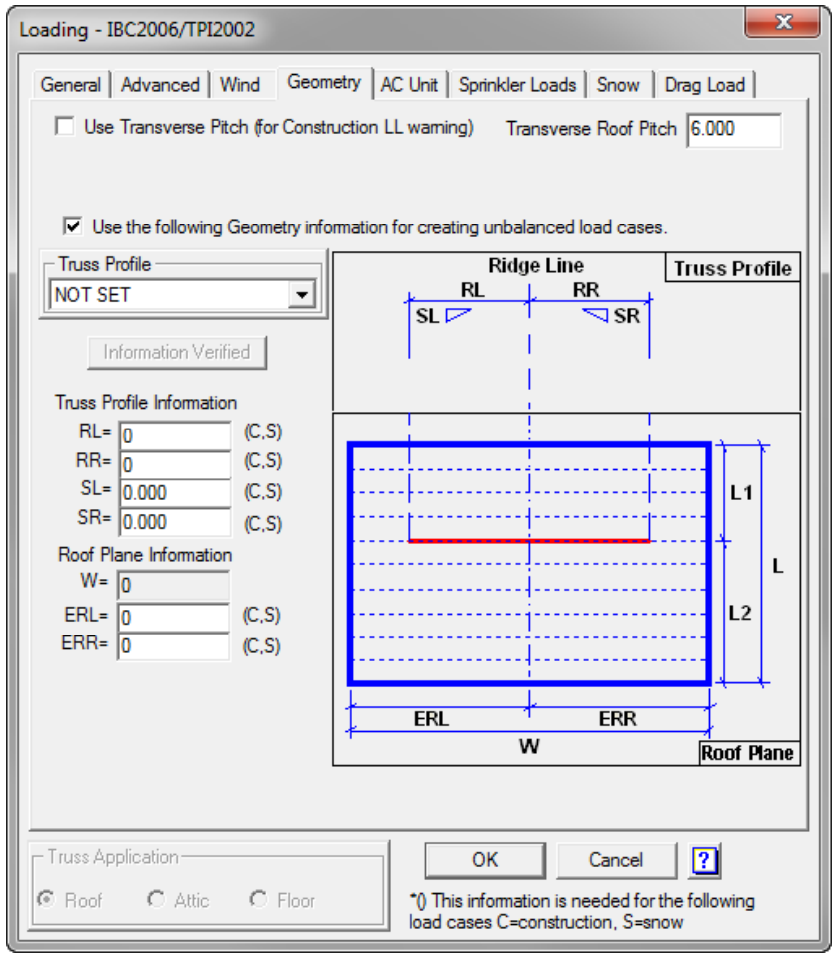


Loading - Geometry Tab

Transverse Pitch and Unbalanced Load Cases

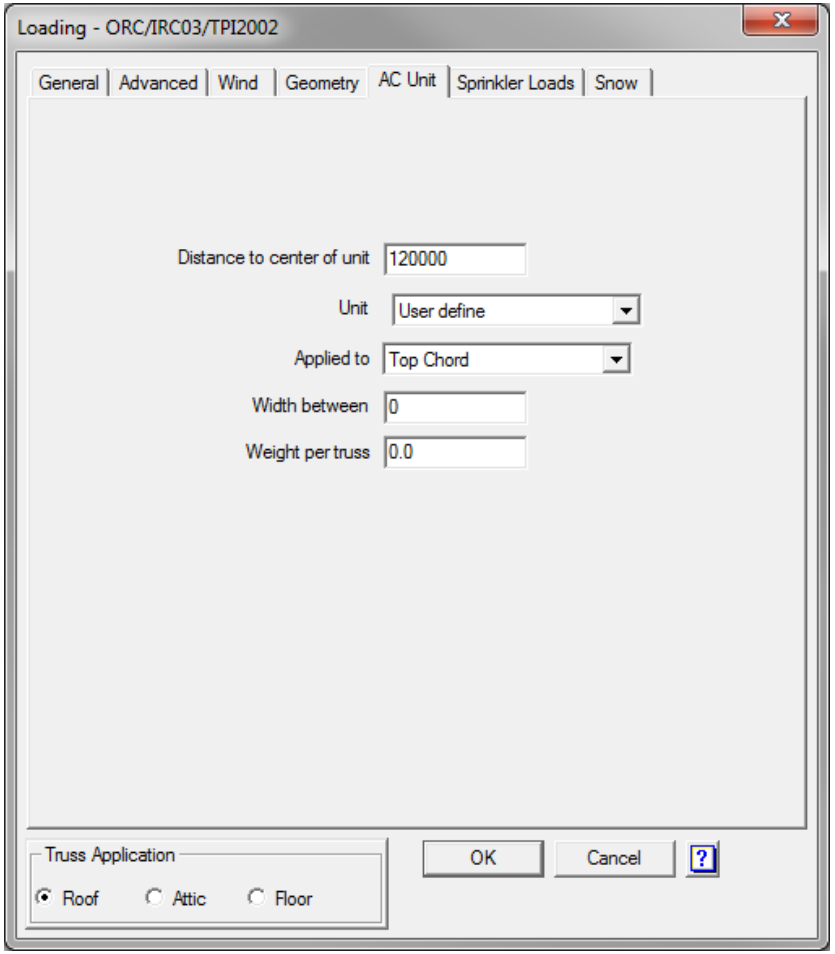
Use Transverse Pitch (for Construction LL warning) – **Transverse Roof Pitch –** Tells the program that, even though a hip roof has a flat top, the flat top is actually under roofing at a specified slope.

Use the following Geometry information for creating unbalanced load cases – Checking this box activates Truss Profile, Truss Profile Information and Roof Plane Information.



Loading - AC Unit Tab

Size, Location, Weight



Unit – The selection made under **Unit** controls the available options.

Distance to center of unit – Allows the user to specify where the center of the unit is located and will apply the **Unit** information at that location.

Applied To – Allows the user to specify where the unit will be attached to the truss.

Options are; **Top Chord**, **Bottom Chord** or **Internal Chord**.

AC Unit (none) – Will not apply any AC Unit loads to the truss.

AC Unit 120 lbs 5ft Wide - Applies a load for the specified weight and size.

AC Unit 150 lbs 5ft Wide - Applies a load for the specified weight and size.

AC Unit 200 lbs 5ft Wide - Applies a load for the specified weight and size.

User Defined – In addition to the **Distance to center of unit** and **Applied To** options, the user may specify the size of the unit in **Width Between** and the weight of the unit in **Weight Per Truss**.

Loading - Sprinkler Loads Tab

Sprinkler Load

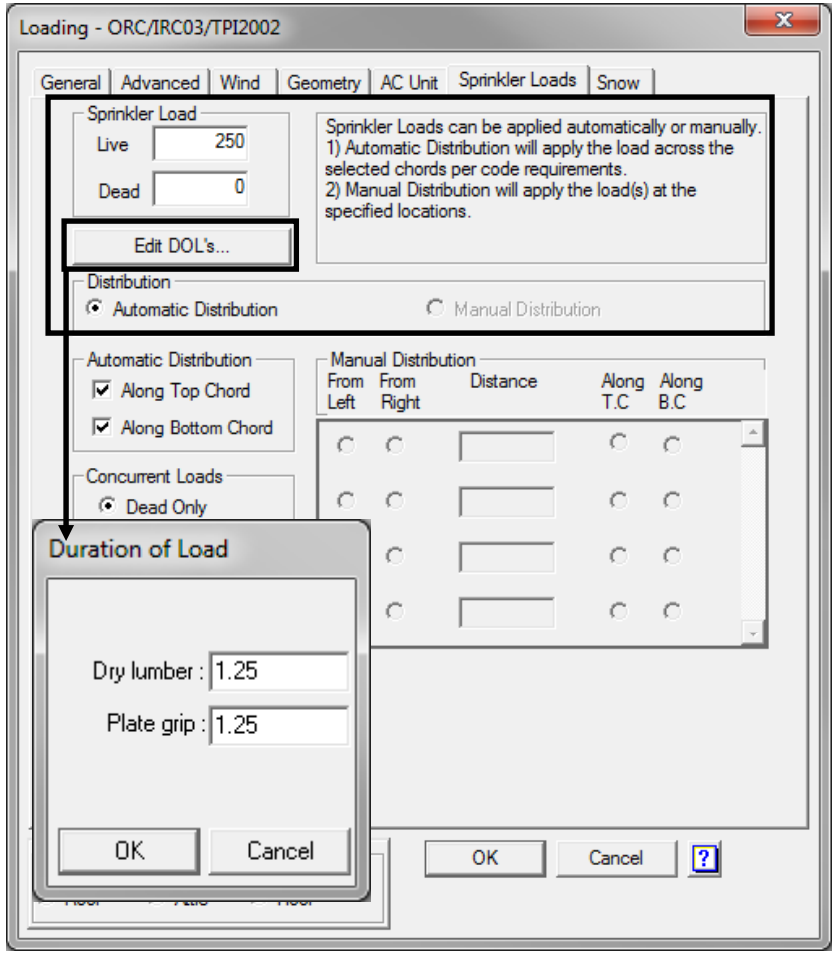
Sprinkler Load - Enter the amount of live and dead load here, if different from the default (250 lbs./0 lbs.)

The live 250lb load is automatically assuming that a persons weight could be hanging for the sprinkler pipe.

Edit DOL's – Same as previously discussed.

Distribution – Sprinkler Loads can be applied automatically or manually.

1. **Automatic Distribution –** Applies the load across the selected chords per code requirements.
1. **Manual Distribution –** Applies the load(s) at the specified locations.



Loading - Sprinkler Loads Tab

Automatic/Manual Distributions

Automatic Distribution - In this section, the user can specify whether the program places automatic sprinkler loads **Along the Top Chord**, **Along the Bottom Chord**, or both by checking the appropriate checkboxes.

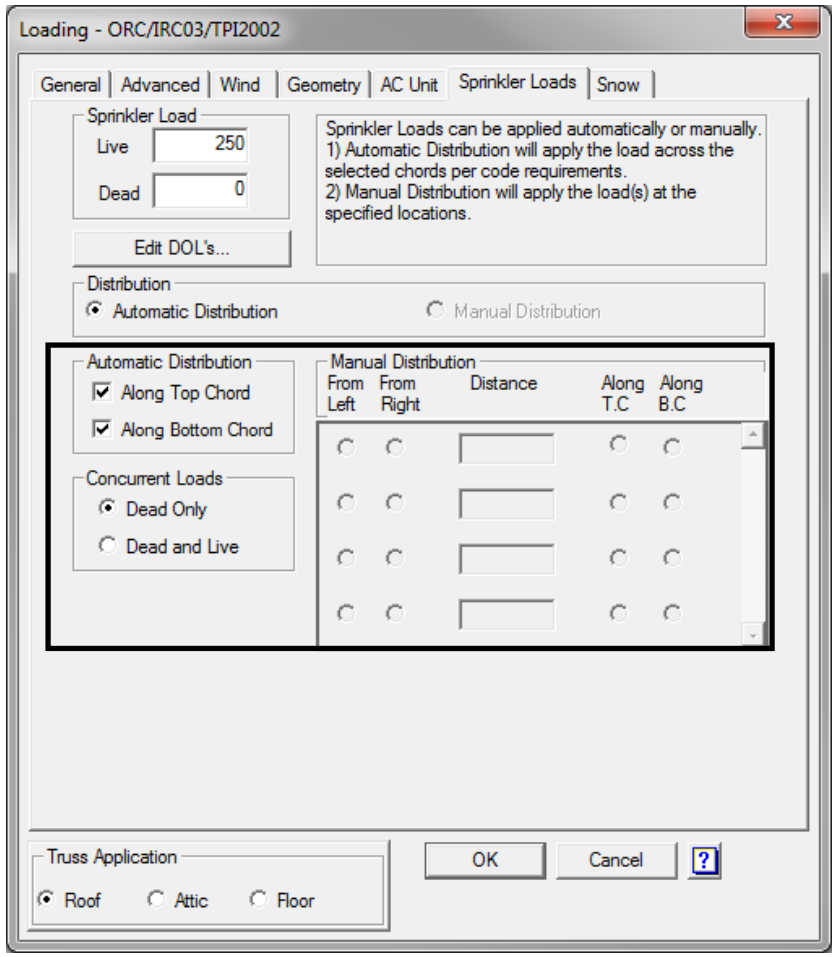
Concurrent Loads - Select how the loads should be applied, normally **Dead** only. When using the Sprinkler as a **scuttle** load the **Live and Dead** should be checked.

Manual Distribution - If **Manual Distribution** is selected, this section becomes active allowing you to add loads manually.

From Left / From Right - The end of the truss from which the load will begin.

Enter the appropriate **Distance** for the location of the sprinkler load.

Select **Along TC** or **Along BC** to have the load placed on the **T**op **C**hord or **B**ottom **C**hord of the truss.



Loading - Snow Tab

Design Methods and Exposures

For this example, the code is **IBC2006/TPI2002** and the **Wind Design Method** is pre-set to **ASCE 7-05**

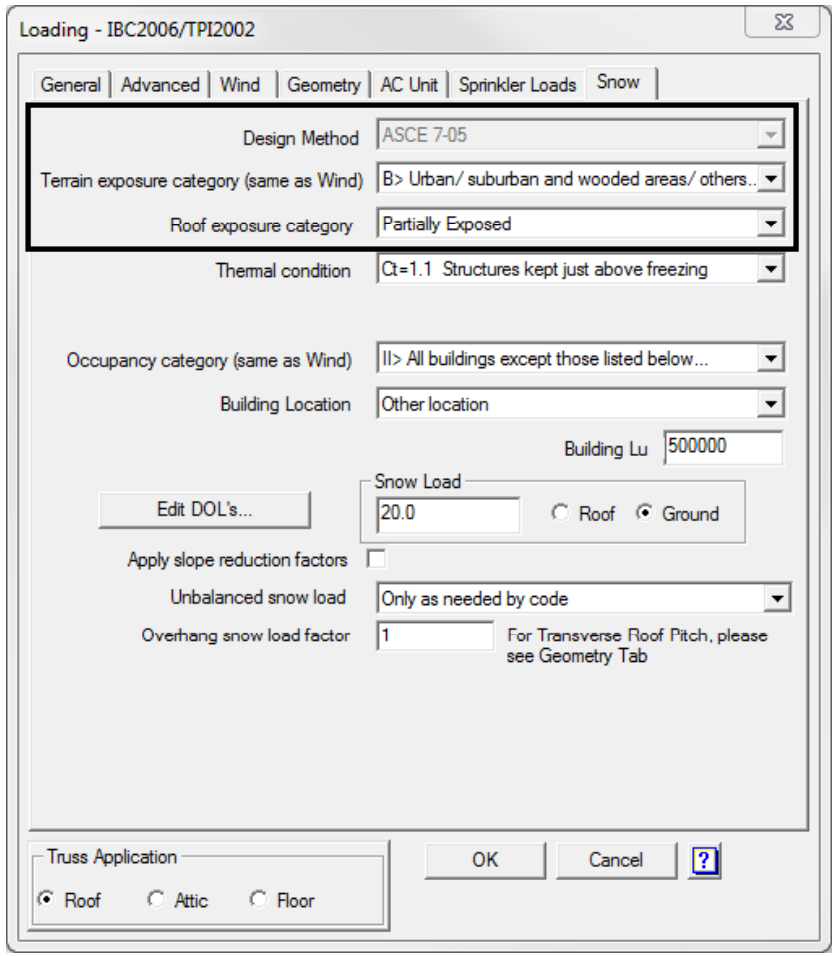
Terrain Exposure Category – These are the same Exposure Category as explained in Wind.

Roof Exposure Category - The exposure factor, , is determined from Table 7-2 of ACSE 7-98. There are three different roof exposure categories to choose from. These are;

Fully Exposed: (***Suggested Default***) Roofs exposed on all sides with no shelter afforded by terrain, higher structures, or trees. Roofs that contain large mechanical equipment, parapets extending above height of balanced snow load are not in this category.

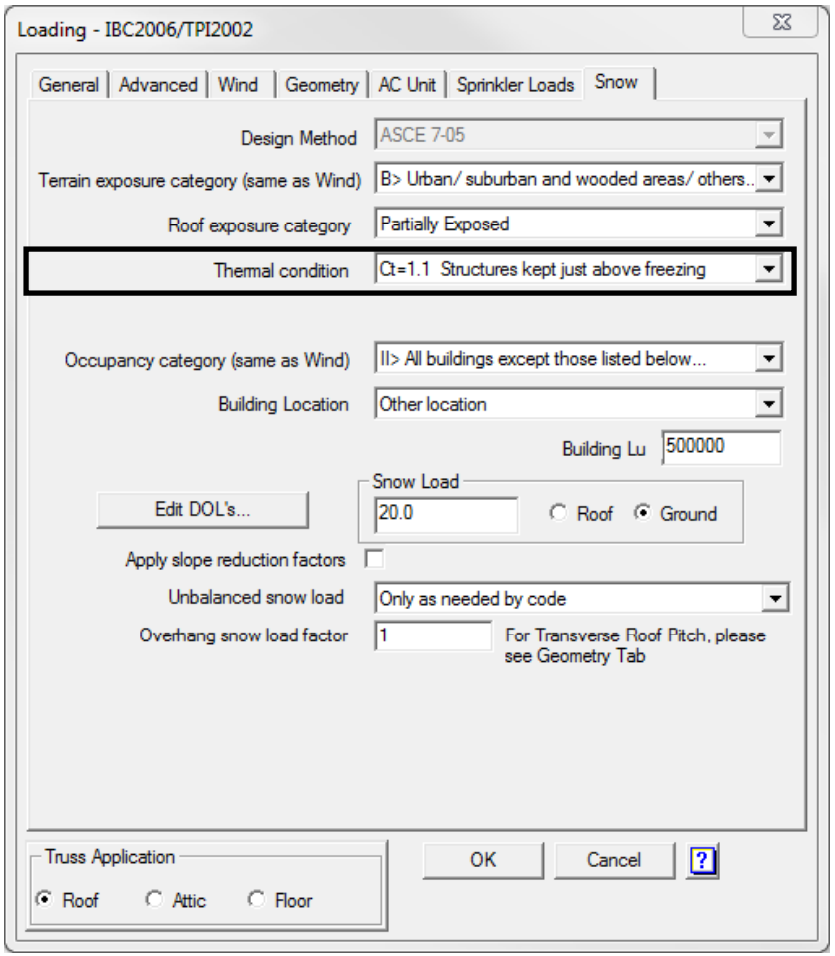
Partially Exposed: All roofs except those listed above.

Sheltered: roofs located tight in among conifers that qualify as obstructions.



Loading - Snow Tab

Thermal Conditions



Thermal Condition:
The thermal factor, Ct, is used to describe the temperature of the roof. There are four different thermal conditions to choose from.

Ct = 1.1, (***Suggested Default***) Structures kept just above freezing and others with cold, ventilated roofs in which the thermal resistance (R-value) between the ventilated space and the heated space exceeds 25 F *hr*ft2 / Btu. This should be the default for most roof systems.

Ct = 1.0, All structures except as listed below.

Ct = 1.2, Unheated structures and structures intentionally kept below freezing.

Ct = 0.85, Continuously heated greenhouses ** with a roof having a thermal resistance (R-value) less than 2.0 F *hr*ft2 / Btu.

** Greenhouses with a constantly maintained interior temperature of 50º F or more at any point 3 ft. above the floor level during winter and having either a maintenance attendant on duty at all times or a temperature alarm system to provide warning in the event of a heating failure.

Loading - Snow Tab

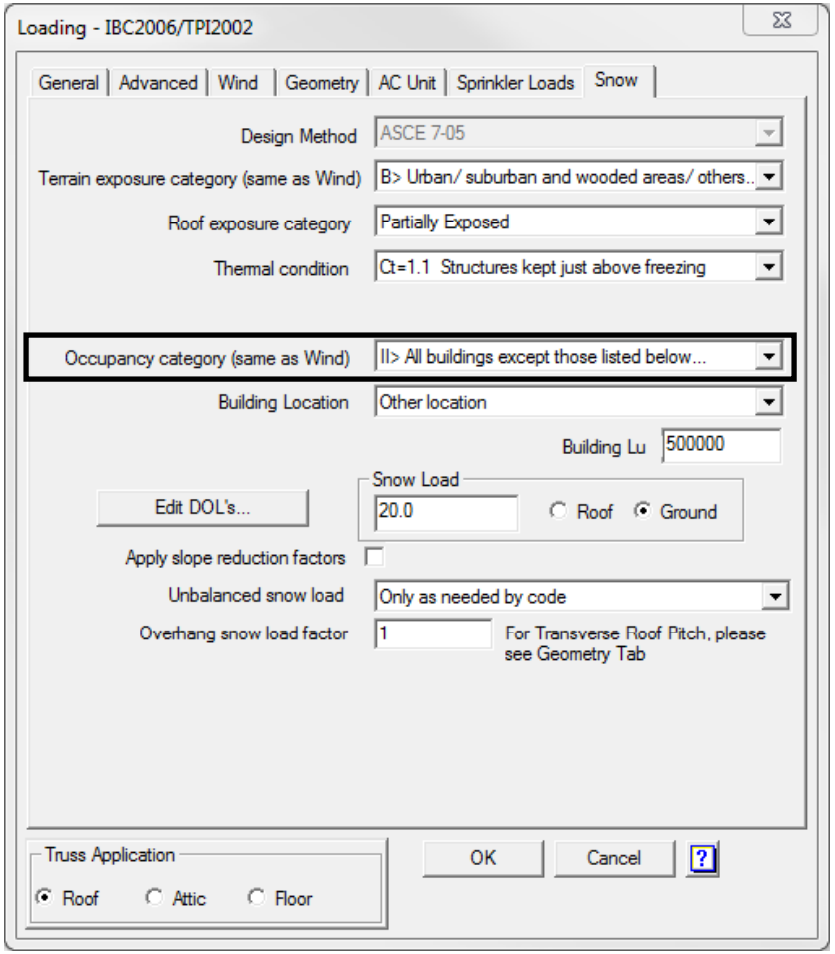
Occupancy Categories

Occupancy Category
Select the appropriate **Occupancy Category** from the drop-down list box. Consult the MiTek engineering department if you're not sure which category is appropriate for your situation. There are four choices. Each is explained as follows:

Category I - Buildings and structures that represent a low hazard to human life in the event of failure, such as agricultural buildings, certain temporary facilities, and minor storage facilities.

Category II - (***Suggested Default***) All buildings and structures except those listed below.

Category III - Buildings and structures where the primary occupancy is one in which more than 300 people congregate in one area.

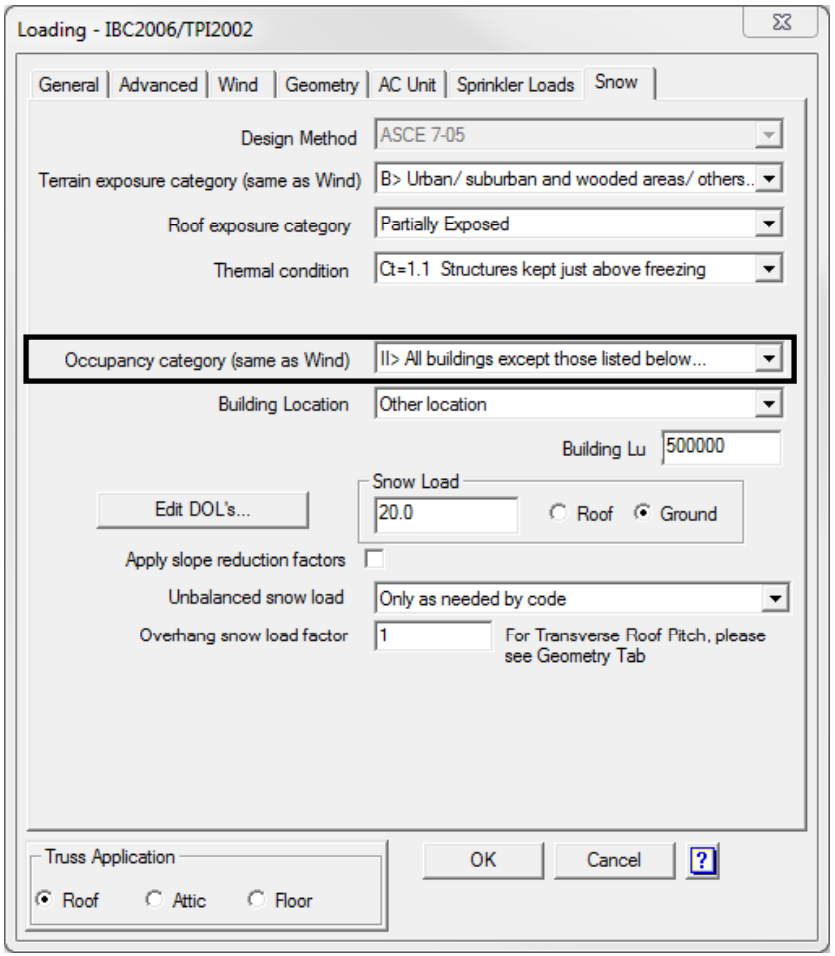


Loading - Snow Tab

Occupancy Categories (cont)

Category IV - Buildings and structures designated as essential facilities, including, but not limited to:

- Hospital and other medical facilities having surgery or emergency treatment areas.
- Fire or rescue and police stations.
- Structures and equipment in government communication centers and other facilities required for emergency response.
- Power stations and other utilities required in an emergency.
- Structures having critical national defense capabilities.
- Designated shelters for hurricanes.



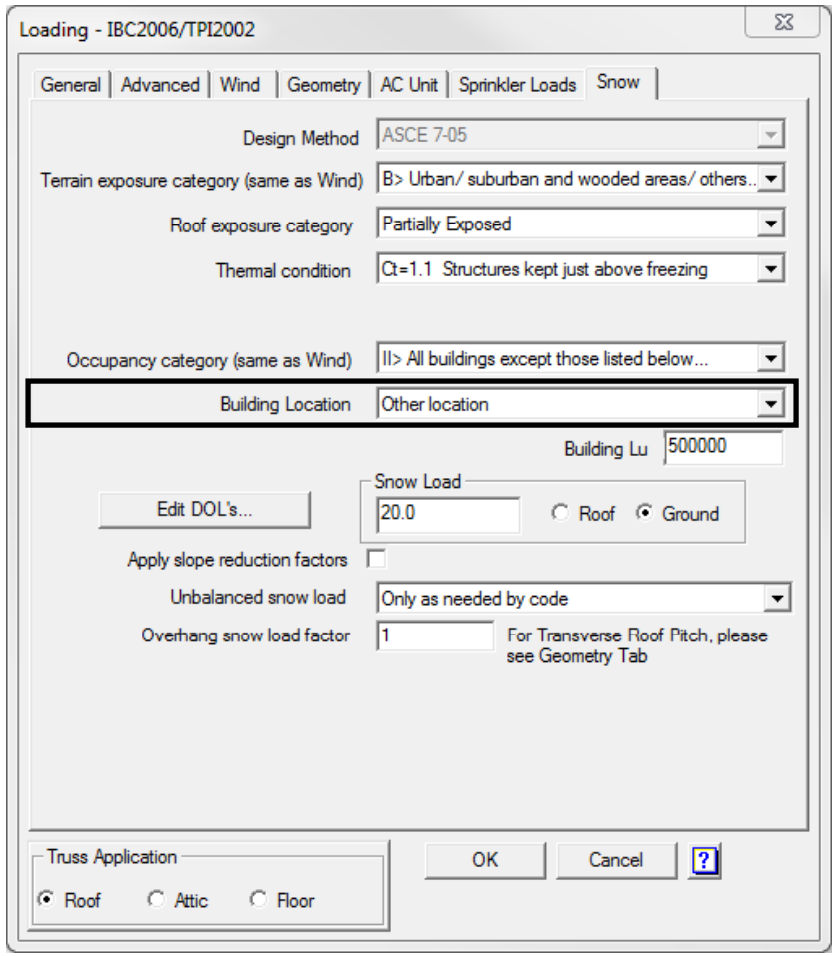
Loading - Snow Tab

Building

Building Locations – These were once customizable locations that could be set by the user. These have been replaced with Exposure Categories.

NOTE: This option relates to very old codes but does still affect drawings. MiTek recommends this setting remain set to **Other Locations**.

Building Lu – the distance from the truss in question to the furthest eave from that truss



Loading - Snow Tab

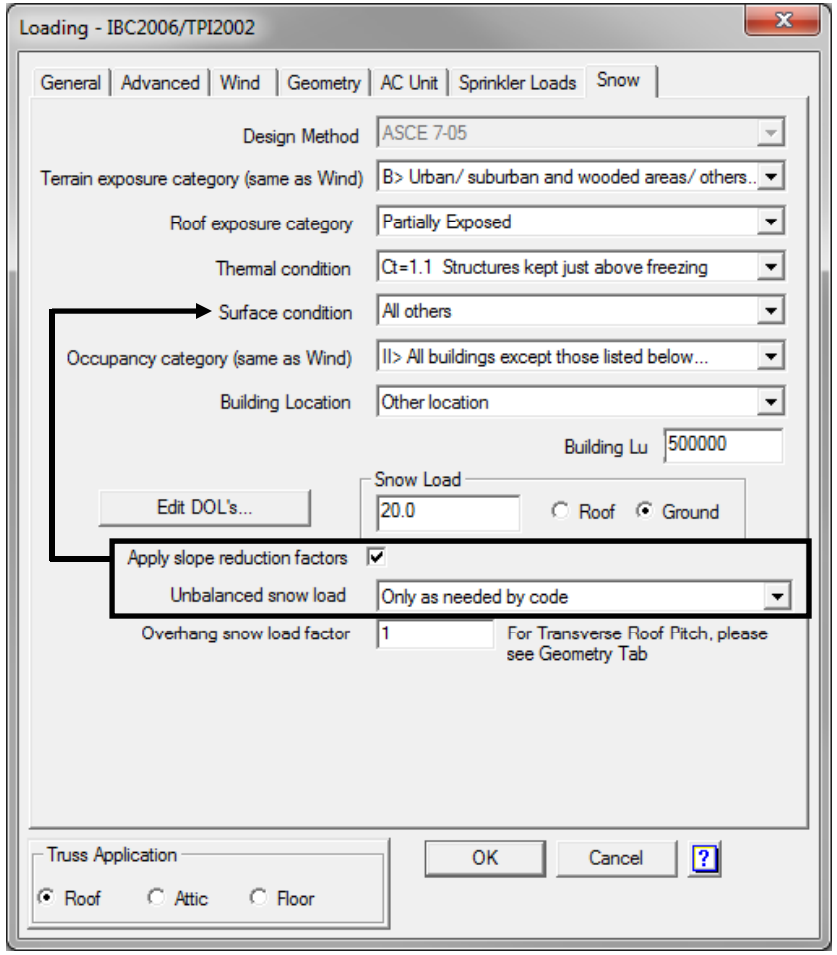
Slope Reduction

Apply Slope Reduction Factors - When checked, the surface condition option becomes available. The surface condition is used to determine the roof slope factor. This roof slope factor is then multiplied by the roof snow load.

NOTE: When **Snow Load** is changed from **Roof** to **Ground**, **Building Length** becomes available

Unbalanced Snow Load – This is usually recommended for everyone.

NOTE: Check with an Engineer before using the other two settings of **Uniform Snow LC Only** or **Only As Needed By Code**

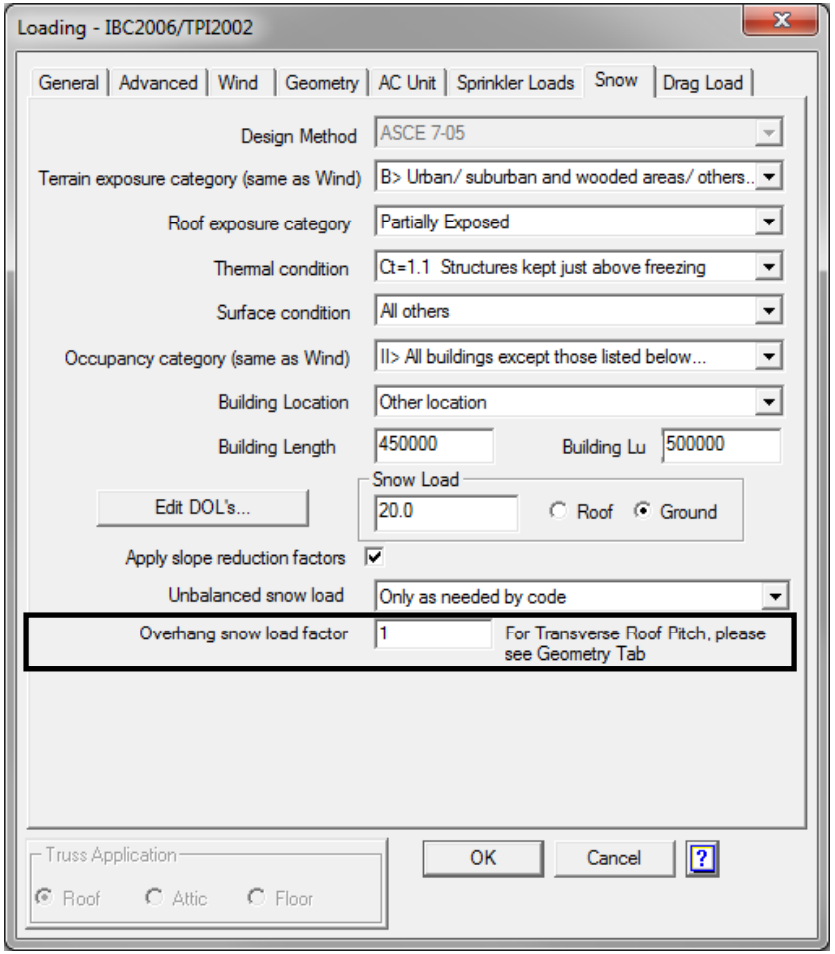


Loading - Loading - Snow Tab

Overhang Load / Transverse Pitch

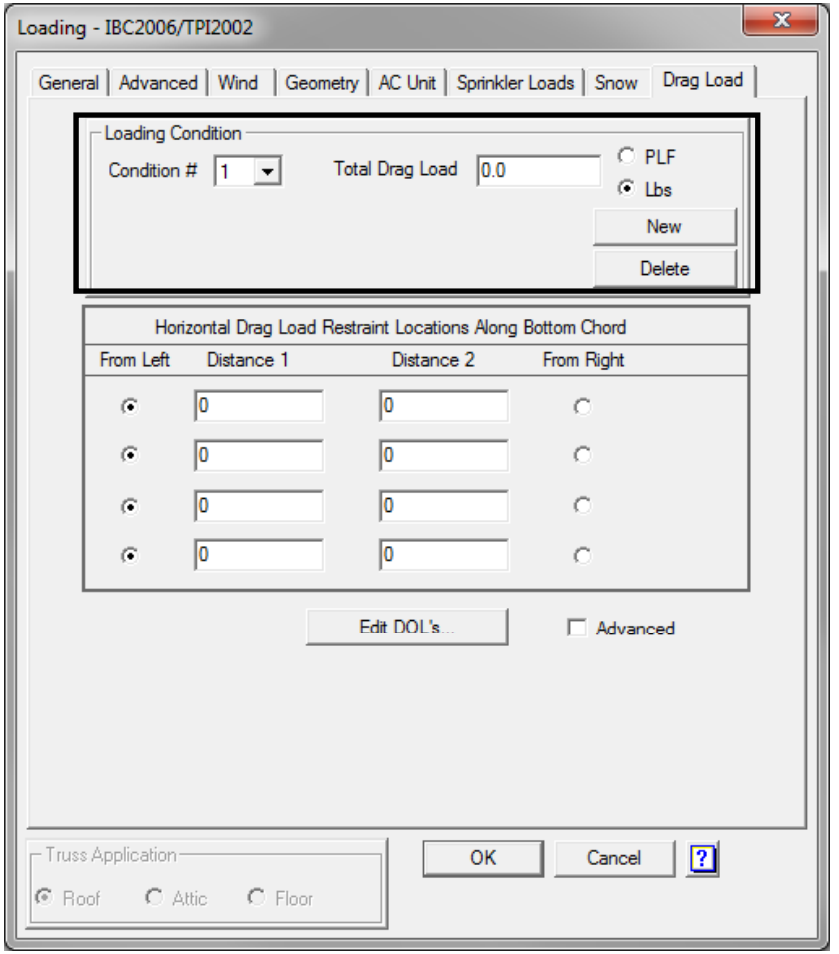
Overhang Snow Load Factor – Allows the designer to specify how snow is handled at the overhang.

NOTE: With the value of one, the overhang snow factor is one times the snow factor, two equals two times, etc. An entry of zero automatically adds an additional 5 lbs of snow load.



Loading - Drag Load Tab

Loading Condition



Drag Loads are grayed out at the Manufacturer and Job levels and can only be activated at the truss level.

Loading Conditions - This section allows the user to select a load condition using the **Condition #** pull down.

Total Drag Load - Enter a value in PLF (pounds per linear foot) or in Lbs (pounds) by choosing the PLF or Lbs radio buttons.

Click **New** to create a new load condition.

Click **Delete** to delete a load condition.

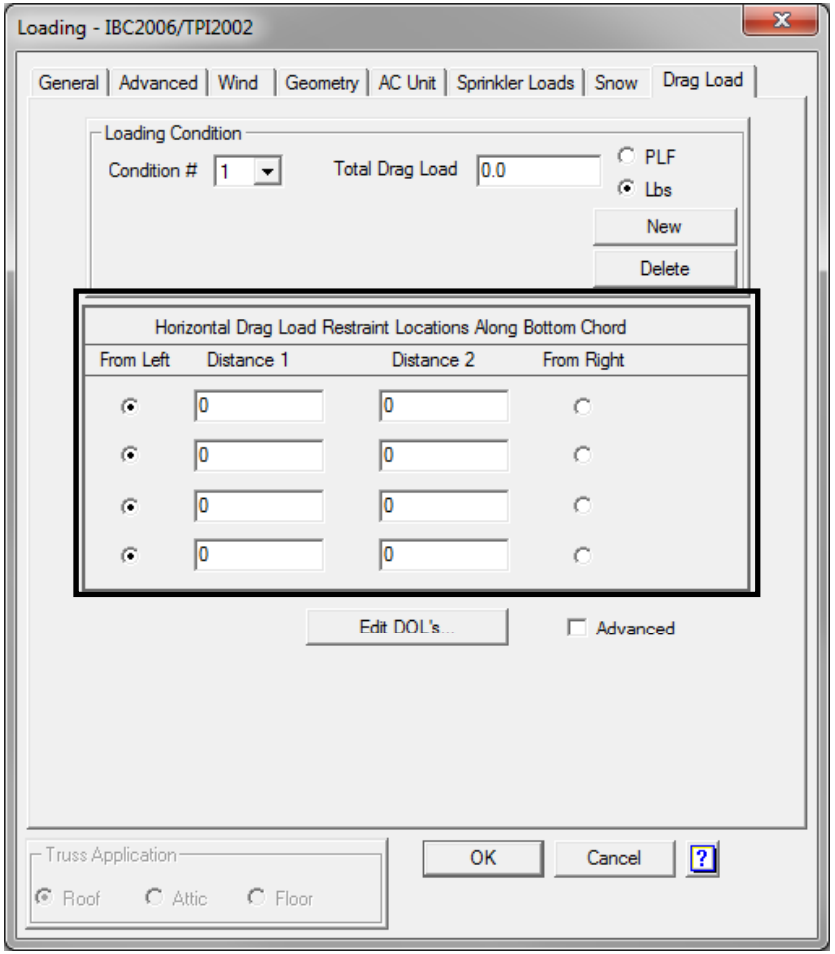
Loading - Drag Load Tab

Horizontal Restraint Locations

Horizontal Drag Load Restraint Locations - In this section, you can specify the locations of the connections that support bottom chord drag loads. These **Restraints** (attachments) vary according to situation, but they mark the points at which straps, nailed connections, or other attachments restrain movement along the truss.

From Left or **From Right** – Select the end of the truss from which the restraint will begin.

Distance 1 to Distance 2 - Enter the appropriate Distance for the location of the restraint (i.e., the length from Distance 1 to Distance 2)



Lumber

Material Setup

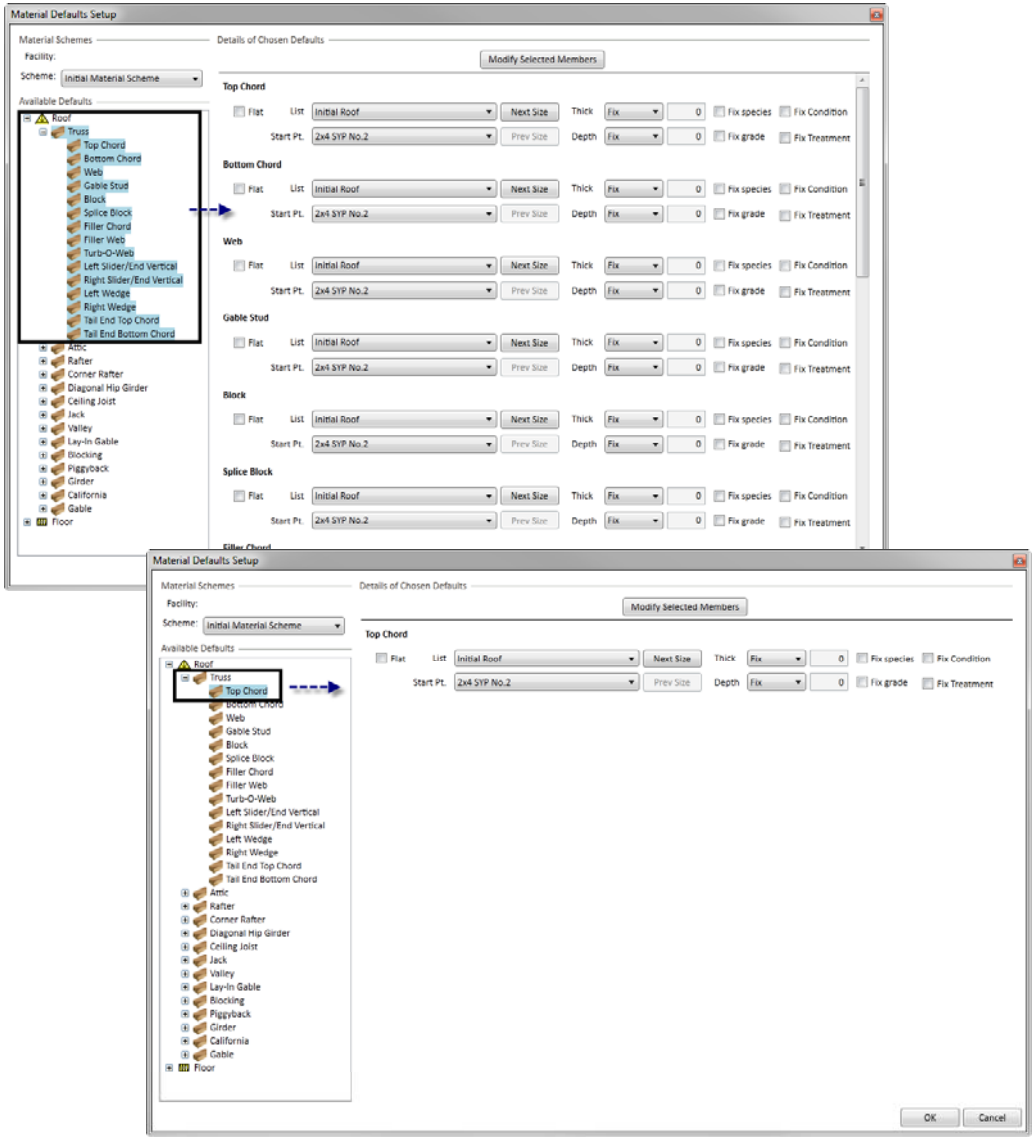
The **Lumber** dialog box contains the manufacturer default **Lumber** and **List** groups.

In this dialog box the **Start Pt** defaults for all pieces may be set.

Remember, any information set up as Manufacturer Defaults may be modified in **SETUP > JOB > LUMBER** as well as **EDIT > LUMBER**.

Click a main truss type to see the List, Starting Pt and other info for each piece.

To isolate a specific piece, click a specific piece from the list below the main truss type



Lumber

Material Setup (cont)

List - created in Setup > Manufacturer > Materials > Material List > Truss > Initial Roof

Flat – Checked will change the lumber orientation to 4x2 for floor trusses

Start Pt – The lowest grade, size and species that the program can use for this particular piece. With Thick and Depth set to Fix and Fix Species and Fix Grade unchecked, the program may look for higher grades and species but cannot change from 2X4's.

Next Size – Advances the Start Pt material up to the next deeper size in inventory.

Prev Size - Advances the Start Pt material down to the next shallower size in inventory

Lumber

Material Setup (cont)

List - created in Setup > Manufacturer > Materials > Material List > Truss > Initial Roof

Thick – Is, for this example, the 2 in the 2X4. The options are:

Any – Allows the program to use any thickness material available in inventory.
Fix – Locks the thickness of the Start Pt material.
Max – Allows the user to enter the maximum lumber thickness to be used

Depth – Is, for this example, the 4 in the 2X4. The options are:

Any – Allows the program to use any depth material available in inventory.
Fix – Locks the depth of the Start Pt material.
Max – Allows the user to enter the maximum lumber depth to be used

Fix Species – Checked, will lock the species of the Start Pt material

Fix Grade - Checked, will lock the grade of the Start Pt material.

Fix Condition – Locks the current condition setting

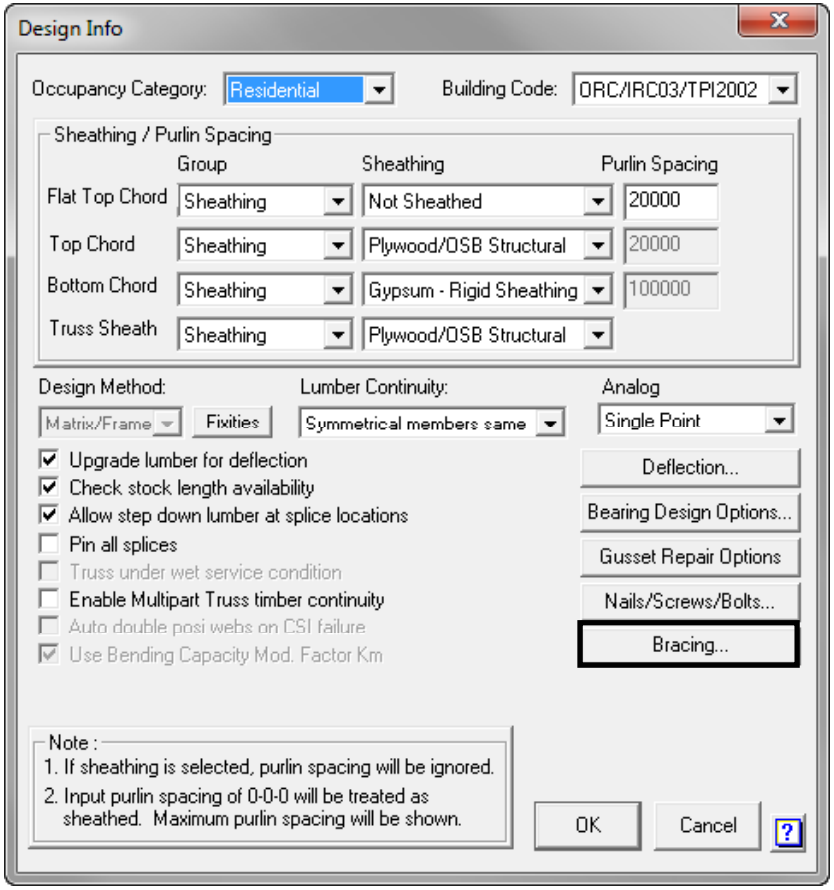
Fix Treatment – Locks the current treatment settings

Bracing Options

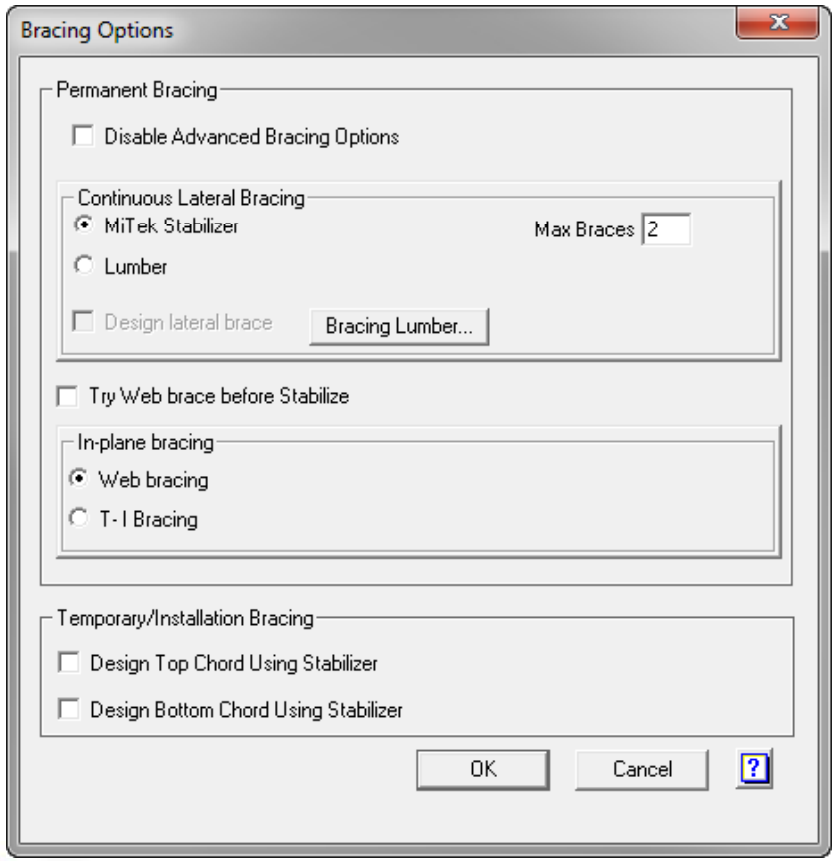
Bracing Options allows the user to specify the type of bracing to be used.

This information may be modified at any time.

See the following pages for details.



Bracing Options(cont)



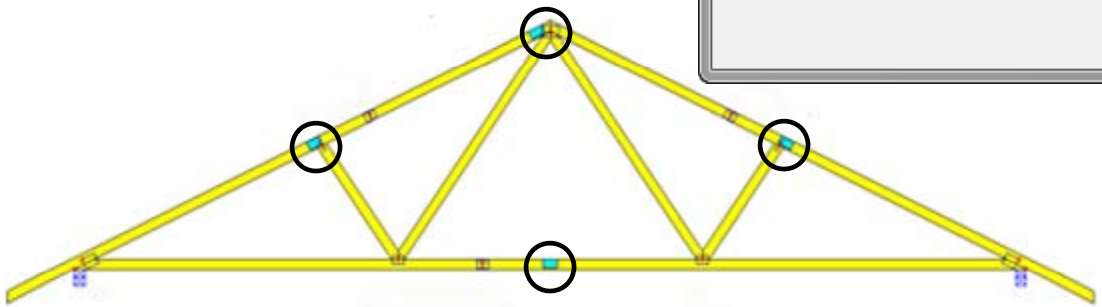
Disable Advanced Bracing Options:

- **Checked -** Only uses lumber as Lateral bracing material.
- **Unchecked -** Advanced bracing features are available.

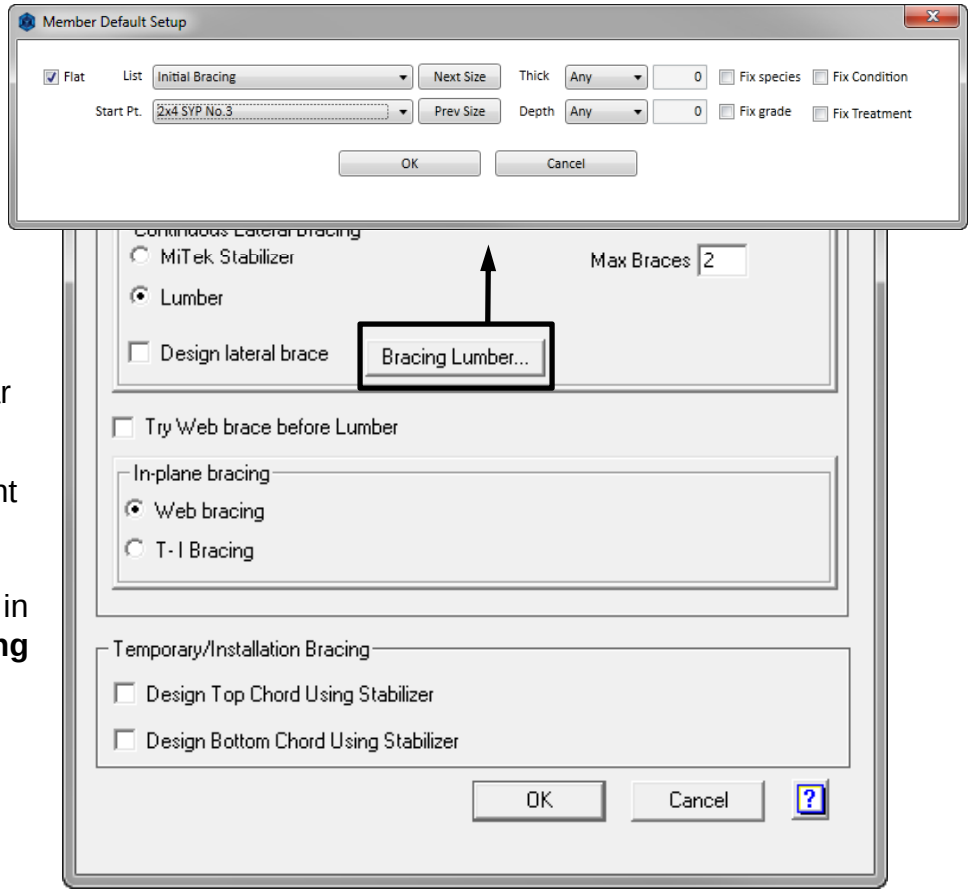
MiTek Stabilizer: The program will use MiTek Stabilizer® as Continuous Lateral Bracing.

Max Braces: The maximum number of braces the program will use before upgrading the members size and/or grade. This field is set to 2 by default.

Lumber: Allows the user to specify lumber as the Lateral Bracing type.



Bracing Options(cont)



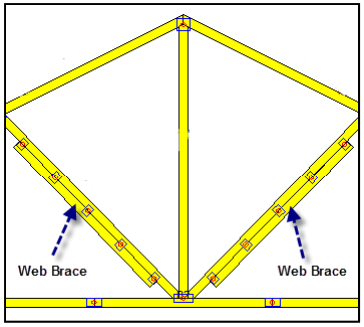
Selecting the **Lumber** radio button activates the **Design Lateral Bracing** option.

Design Lateral Bracing: This option performs the same as standard lumber bracing, but with one exception. When the bracing is inadequate, the **Review Required** note will appear on the Engineering Drawing.

Bracing Lumber: Allows the user to specify the starting point for lumber to be used for lateral bracing.

NOTE: To use this option, **Initial Bracing** must be available in **Setup > Manufacturer > Materials > Material List > Bracing**

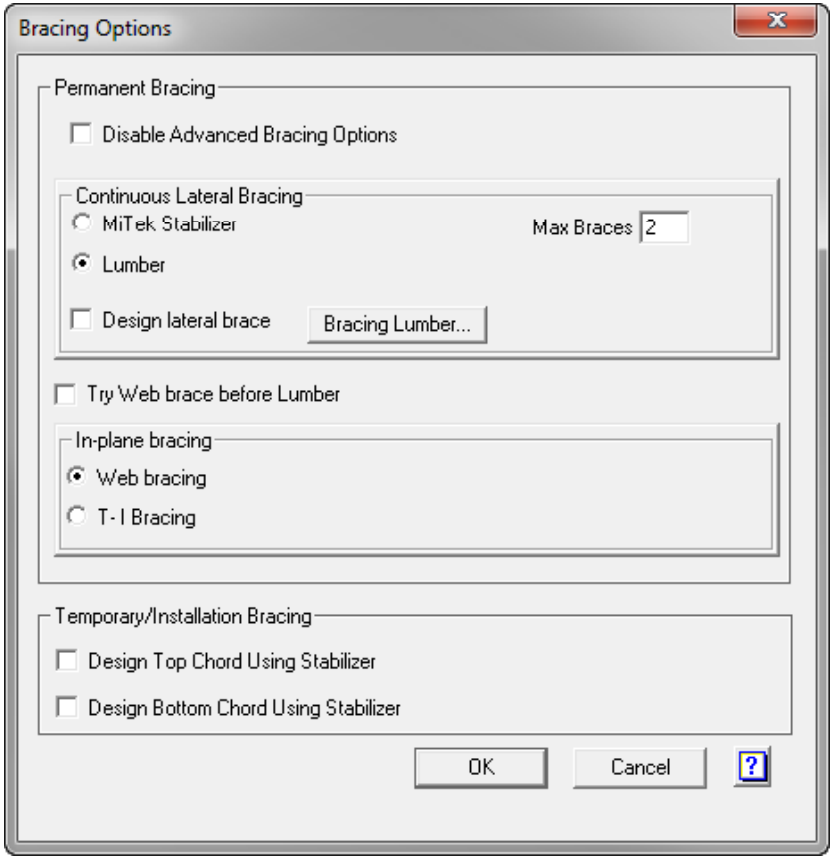
Bracing Options(cont)



Web Brace:
A shop applied brace that does not Interfere with truss stacking.

Checking this option will gray out T-I Bracing.

T – I Bracing: This option is required for trusses that do not meet Repetitive Stress criteria. This will place, when required, one brace (T) or two braces (I) one on each web edge. See **Repetitive Stress** criteria below.



Rep Stress - This is used for loading when there are three trusses side by side. Loading on the center truss is supported by the other two trusses With Repetitive Stress on in truss basics, the program will add a 15% increase in bending (Fb) for similar member lumber only if the truss meets these requirements:

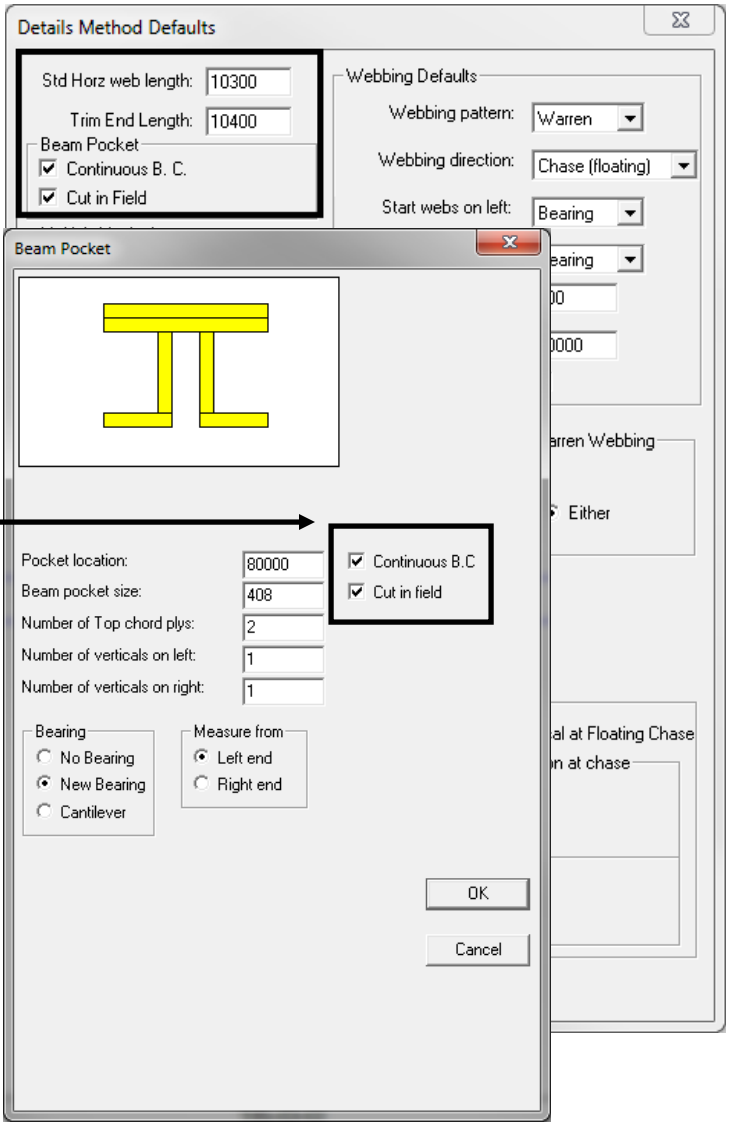
- There must be 3 or more trusses positioned side by side, in contact and with a matching web pattern or
- The on center space of these trusses must be 2 ft OC or less and they are joined by roof sheathing, flooring, gypsum or other load distributing elements attached directly to the chord.

Detail Method Defaults

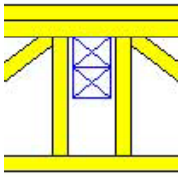
Std Horz Web Length: Defaults to 1’-3”. This is the horizontal half panel dimension. Each web in full, or half, panels will have a standard cut length for each depth of floor truss.

Trim End Length: Tells the program the width of a Trimmable End block.

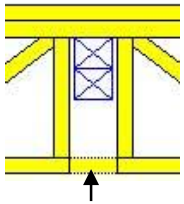
Beam Pocket: These are presets that appear on the beam pocket dialog window.



Continuous B.C. – The floor truss will have a solid bottom chord and will have to slide onto the beam.



Cut in Field – Will design the truss so plates are not extended into a beam pocket area. The bottom chord under the beam pocket will be removed at the jobsite.



To be removed in field

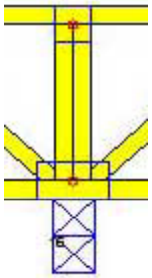
Detail Method Defaults (cont)

Multiple Verticals: Has an activation check box and a gap distance. When multiple verticals is selected, the program will space verticals by a specified gap width

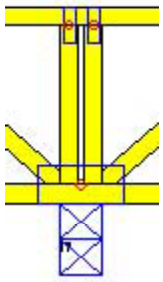
- **Cut Top Chord –** Adds a note to the engineered Drawing stating that the truss top chord may be cut between the verticals. This allows for cambered floor trusses to make contact with an interior bearing wall.

- **Field Cut Gap –** This is the distance the verticals will be separated to allow for the top chord cut.

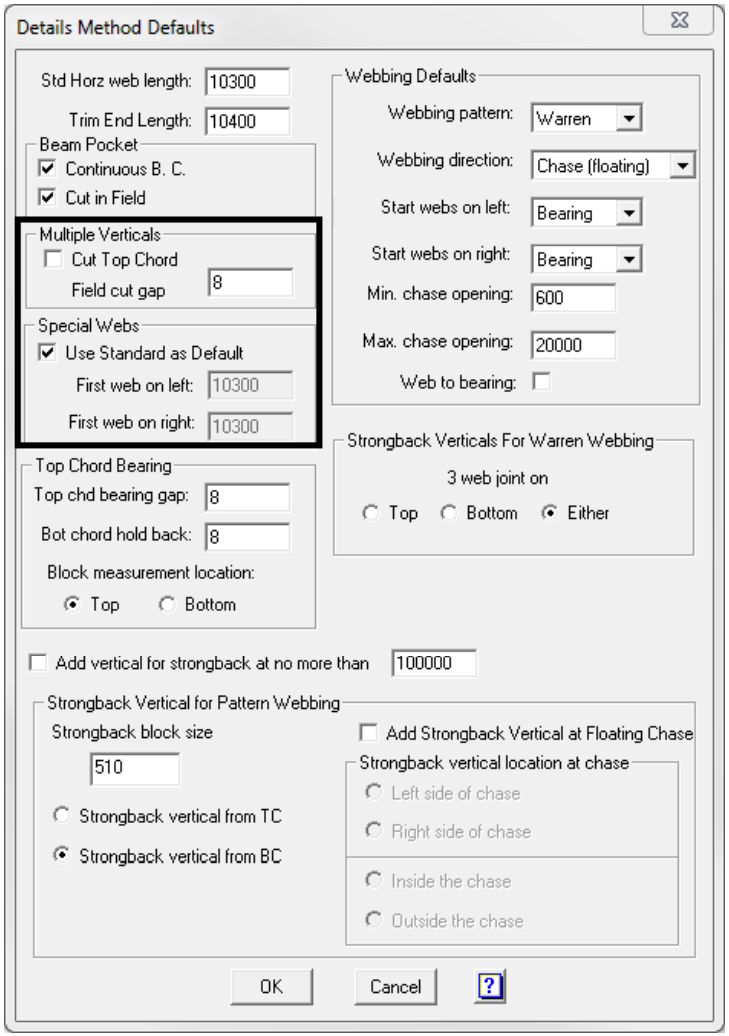
Special Webs: When Use Standard as Default is checked, the program uses the Std Horz Web Length for any special webbing. If uncheck, values for the First Web on the Left and the First Web on the Right may be added. The other webs will adjust to fit these special distances.



Multiple Verticals unchecked



Multiple Verticals checked



Detail Method Defaults (cont)

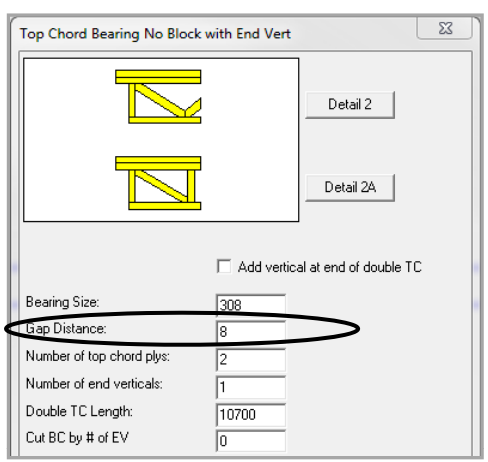
Top Chord Bearing Gap – Places a one half inch gap between the end vertical and the inside of bearing.

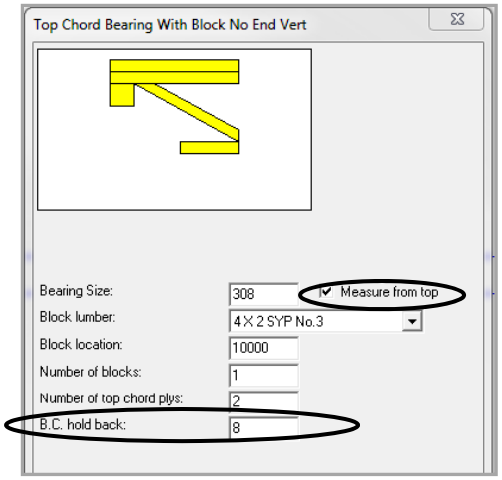
Bottom Chord Hold Back – Holds the bottom chord back, one half inch, from the inside of bearing on floor trusses with no end vertical.

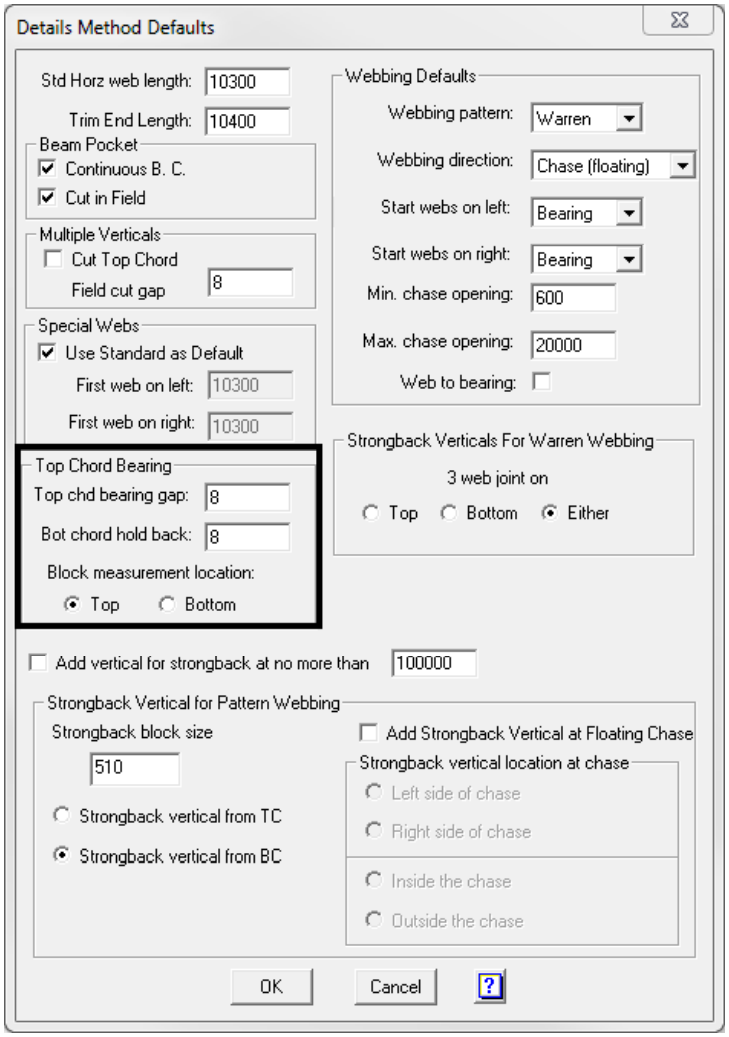
Block Measurement Location – When entering a bearing block dimension,

Top - Tells the program the block dimension will measure from the top of truss down to the bottom of the block.

Bottom - Tells the program the block dimension will measure from the bottom of truss up to the bottom of blocking.


Top Chord Bearing No Block with End Vert
Detail 2
Detail 2A
Add vertical at end of double TC
Bearing Size: 308
Gap Distance: 8
Number of top chord plys: 2
Number of end verticals: 1
Double TC Length: 10700
Cut BC by # of EV 0


Top Chord Bearing With Block No End Vert
Bearing Size: 308
Measure from top
Block lumber: 4 X 2 SYP No.3
Block location: 10000
Number of blocks: 1
Number of top chord plys: 2
B.C. hold back: 8



Detail Method Defaults (cont)

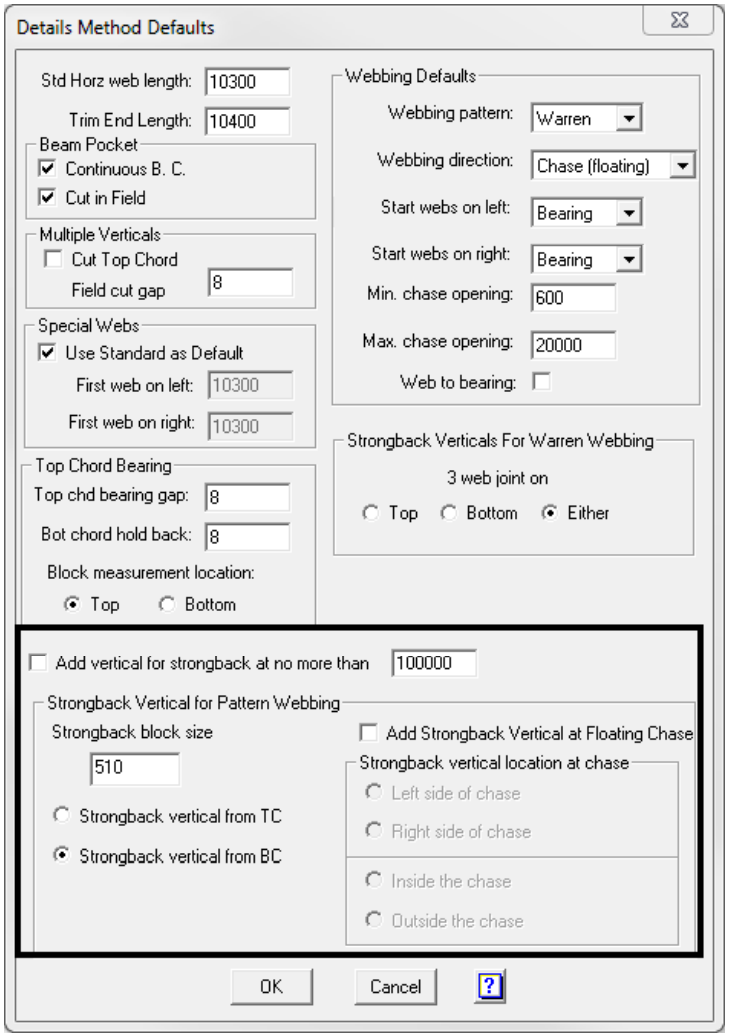
Add Vertical for Strongback at no more than: To specify the location of a vertical the strongback will be nailed to. Enter a value for that vertical location.

Strongback Block Size:

Strongback Vertical from TC or BC: Tells the program from which chord the strongback verticals will be added.

Add Strongback Vertical at Floating Chase: When checked, this option will activate the **Strongback Vertical Location** options.

The **Strongback Vertical Location** allows the user to select one each of either **left** or **right** side of floating chase and one each of **inside** or **outside** of floating chase.



Detail Method Defaults (cont)

Webbing Defaults: Items selected in this section will be the starting defaults for new floor trusses. These options may be modified as trusses are created if needed.

Webbing Pattern - Select Warren, Kweb or Posi-Strut as a default webbing type.

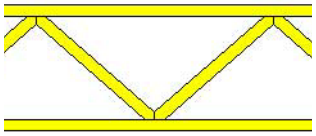
Webbing Direction - These options control the direction from which the program will web a floor truss.

Chase (floating) - This option will float the chase to maintain as many standard as possible**.**

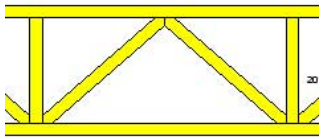
Chase (centered) - Webs around a centered chase.

Web from Left – Starts webbing from the left end of the truss.

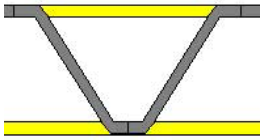
Web from Right - Starts webbing from the right end of the truss.



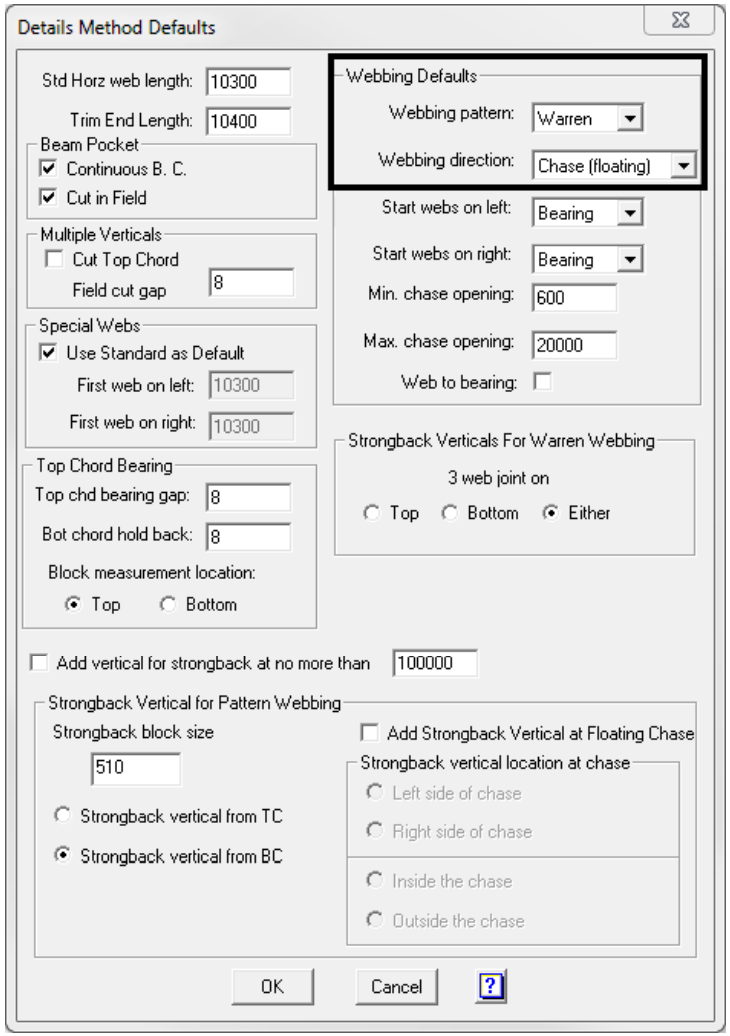
Warren Web



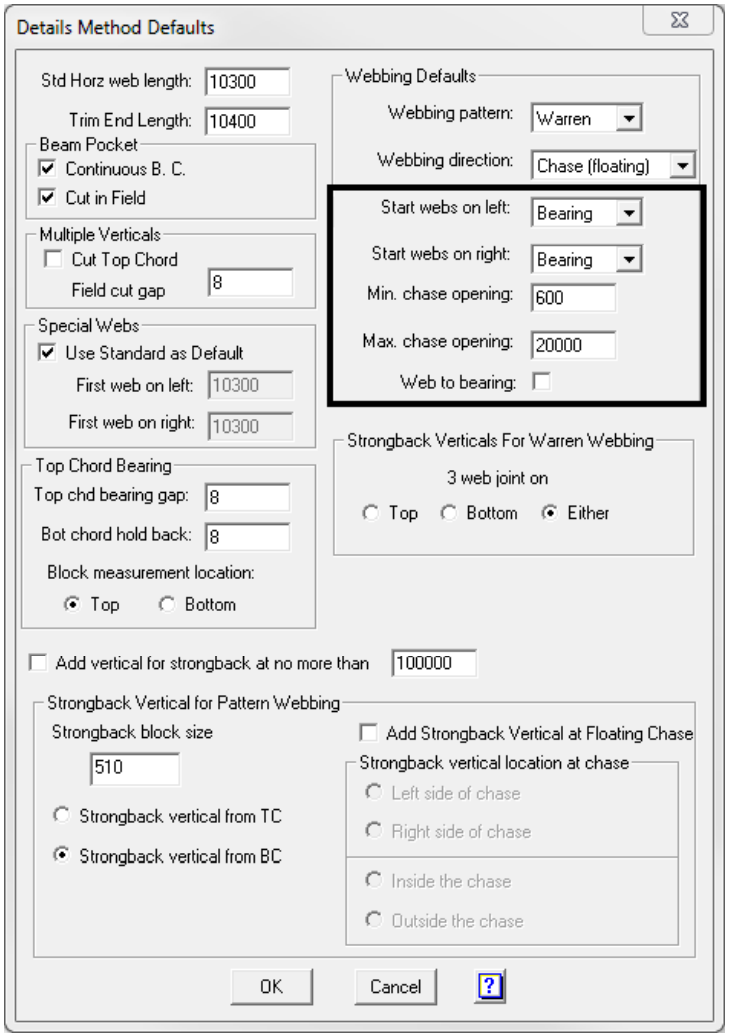
Kweb Web



Posistrut Web



Detail Method Defaults (cont)



Webbing Direction – (continues)

Outside In - Begins webbing from the left or right ends to the center.

Equal Panel – Webs the truss using equal panels size for the entire truss.

Equal Panel (sym) - This option causes the program to create *symmetrical* panels of equal size for webbing.

Start Webs on Left - Set the default location for webbing that starts on the left end of the truss; options are Top, Bottom, or Bearing. **Bearing is recommended**

Start Webs on Right - Set the default location for webbing that starts on the right end of the truss; options are Top, Bottom, or Bearing. **Bearing is recommended**

Min. Chase Opening - Specify the smallest size chase to be used.

Max. Chase Opening - Specify the largest size chase to be used. Maximum is 2 feet.

Web to bearing – Forces the web to start at the bearing.

Detail Method Defaults (cont)

Strongback Verticals for Warren Webbing

3 Web Joint on:

Top – All strongback vertical 3 web joints will be placed at the top chord.

Bottom – All strongback vertical 3 web joints will be placed at the bottom chord.

Either – Can use any top or bottom chord joint for the strongback vertical.

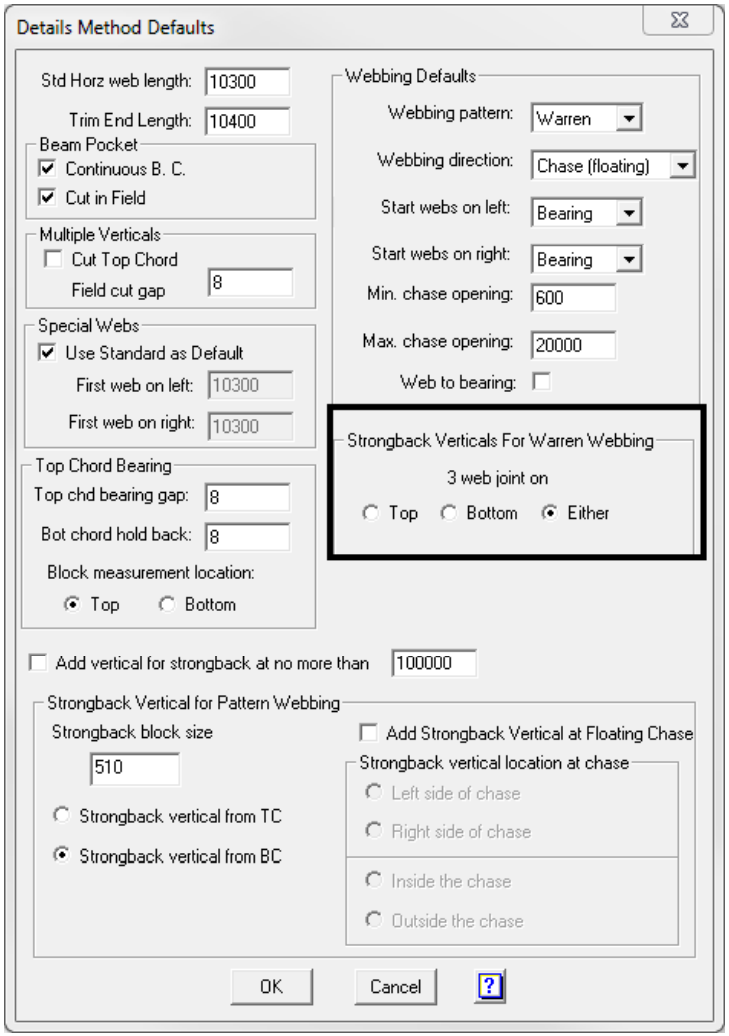
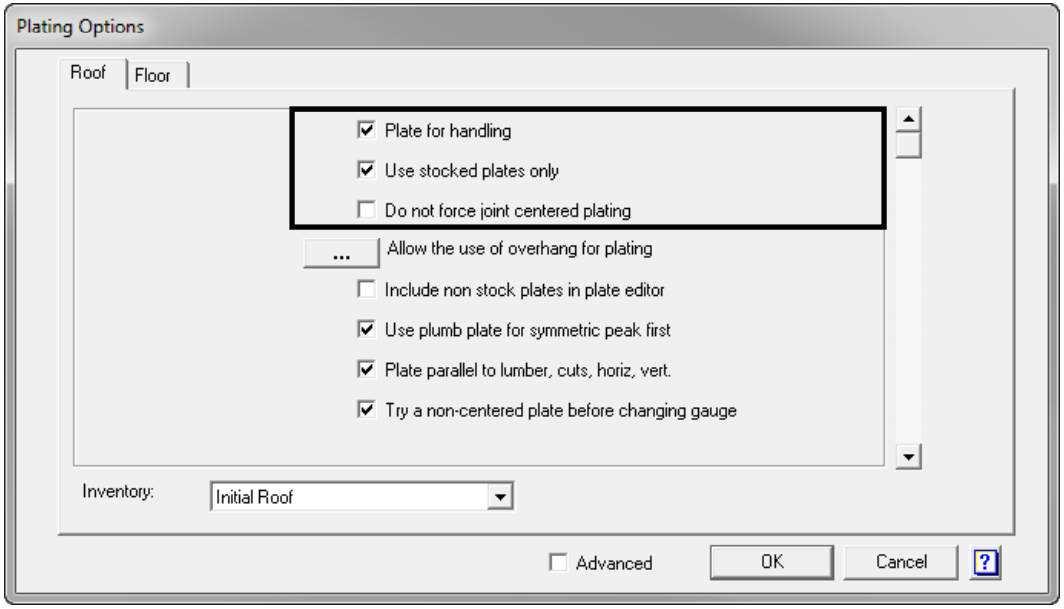


Plate Options (cont)



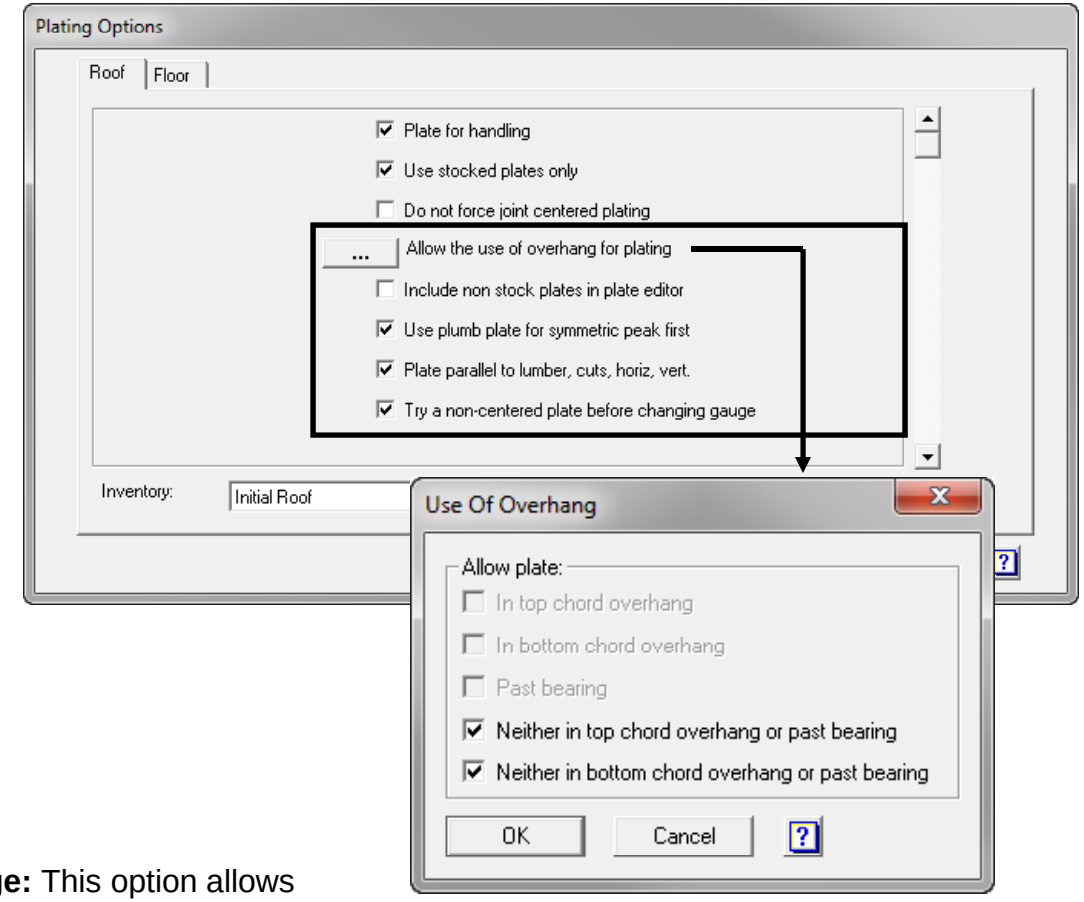
Plating Options may be setup for roof and floor trusses

Plate for handling: Instructs the program to analyze each truss and truss joint and up-size the plate if necessary for handling and erection situations.
We recommend keeping this option checked

Use stocked plates only: Instruct the program to only use the plates that are available in your plate inventory. If this option is not checked, then the smallest available plate for that joint or splice will be used.

Do Not Force Joint Centered Plating: The program will use the smallest plate for the joint in question. While this option will lend itself to smaller plates, it is important that each plate be placed on the joint exactly as called for on the engineering drawing.

Plate Options (cont)



Allow the use of overhang for plating: Allows for the plate to extend into the overhang.

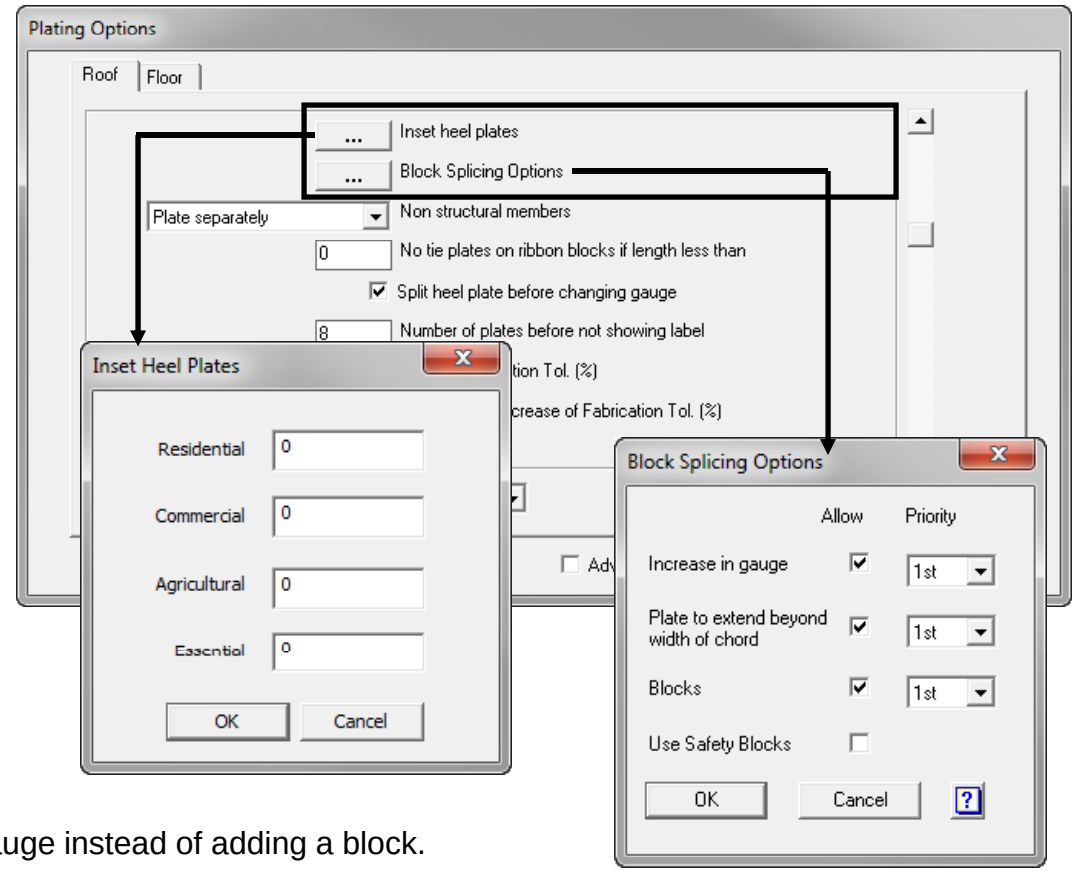
Include non stock plates in plate editor: To view and possibly use plates that are turned off or not in stock.

Use plumb plate for symmetric peak first : Checked will always use a vertical (plumb) plate first.

Plate parallel to lumber, cuts, horiz, vert: when checked, the program will only place a plate parallel to lumber cuts. horizontal, or vertical. If this is not checked, the program is allowed to try other plate orientations.

Try a non-centered plate before changing gauge: This option allows the program to cycle through the first selection of plates before advancing to the next highest gauge. In other words, the program will try each plate positioned and dimensioned in a variety of ways before going to the next gauge plate in inventory. While this option may use larger size plates on certain joints, it would prevent the program from using a smaller, higher gauge plate on the same joint.

Plate Options (cont)



Inset heel plates: Allows the user to move the plate the specified distance. This option was to be used for trusses installed in pole buildings but can be setup for each application (e.g. residential, commercial…). Keeps the installer from having to drill though the plate when installing trusses. It is limited by the bearing width, so the plate cannot be moved by more than the width of the bearing minus a 1/16th.

Block Splicing Options: This dialog box governs the way the program will use splice blocks. A *splice block* is typically encountered with small dimensional bottom chord lumber containing exceptionally high axial forces. If this option is NOT checked, the program will use a splice block, if needed, before cycling to the next gauge plate.

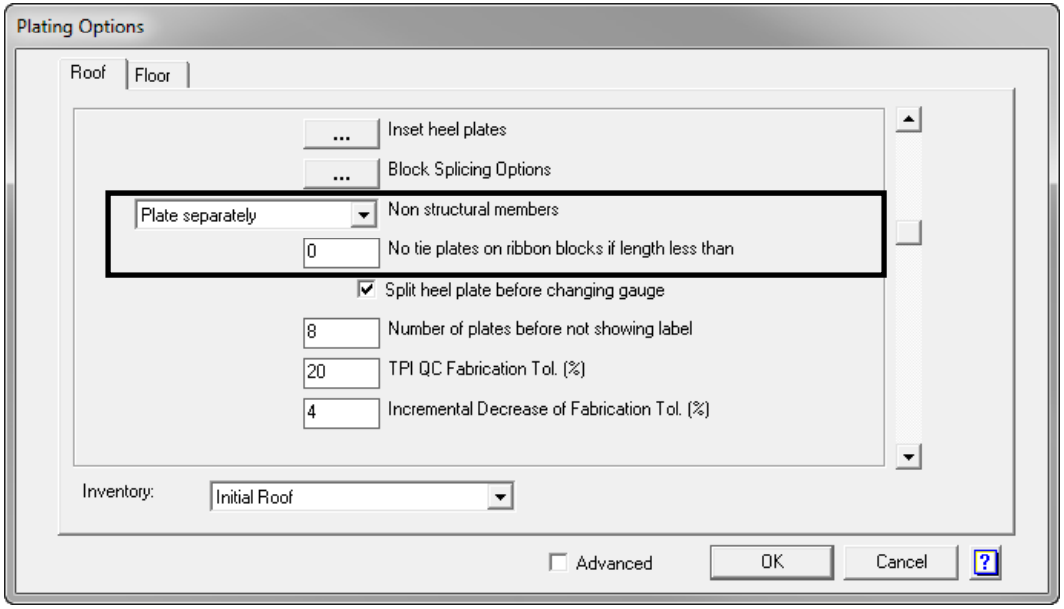
Increase In Gauge: Allows an increase of plate gauge instead of adding a block.

Extend Beyond Width of Chord: Allow a plate to extend beyond the width of a chord before placing a block.

Blocks: Allows the placement of a splice block.

Use Safety Blocks: Block added when a plate extends more than ½" past a main member, (e.g. a splice). This block may be needed to help plating or for safety measures to cover the plate edge. The user may chose not to use a safety block but if a splice block is needed it must be there.

Plate Options (cont)



Non structural members: This option governs the plating of members that are **nonstructural**; i.e. those that are not part of the load-bearing components of a truss. An example would be a filler on a scissor truss.
The options are:

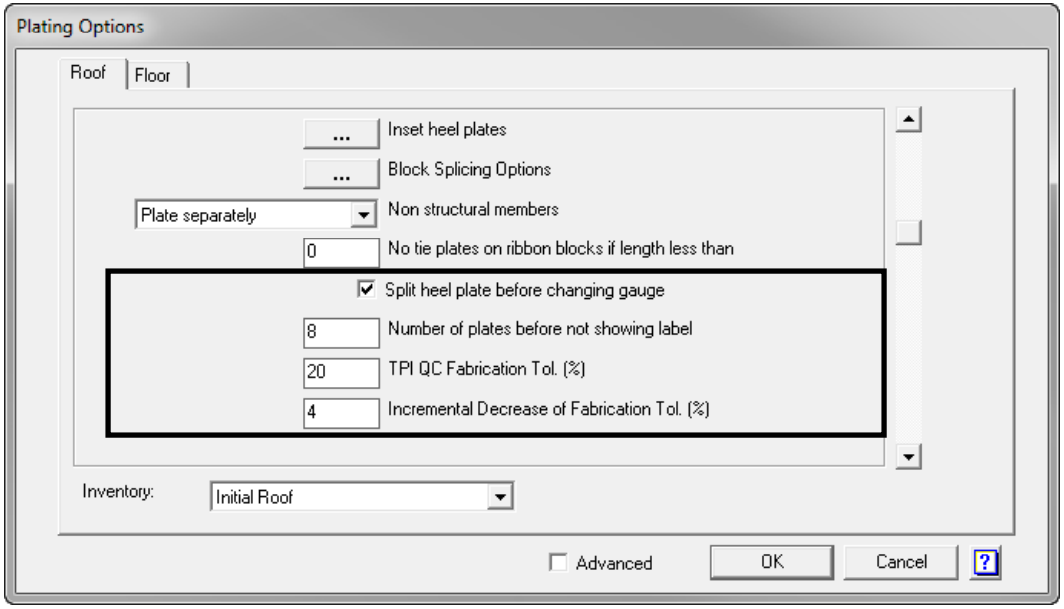
Plate As Structural causes the program to plate nonstructural members as if they were load-bearing members.

Do Not Plate causes the program to ignore the nonstructural members while plating.

Plate Separately causes the program to plate the nonstructural members, but to plate them separately from structural members.

No tie plates on ribbon blocks if length less than: will remove tie plates on ribbon blocks.

Plate Options (cont)



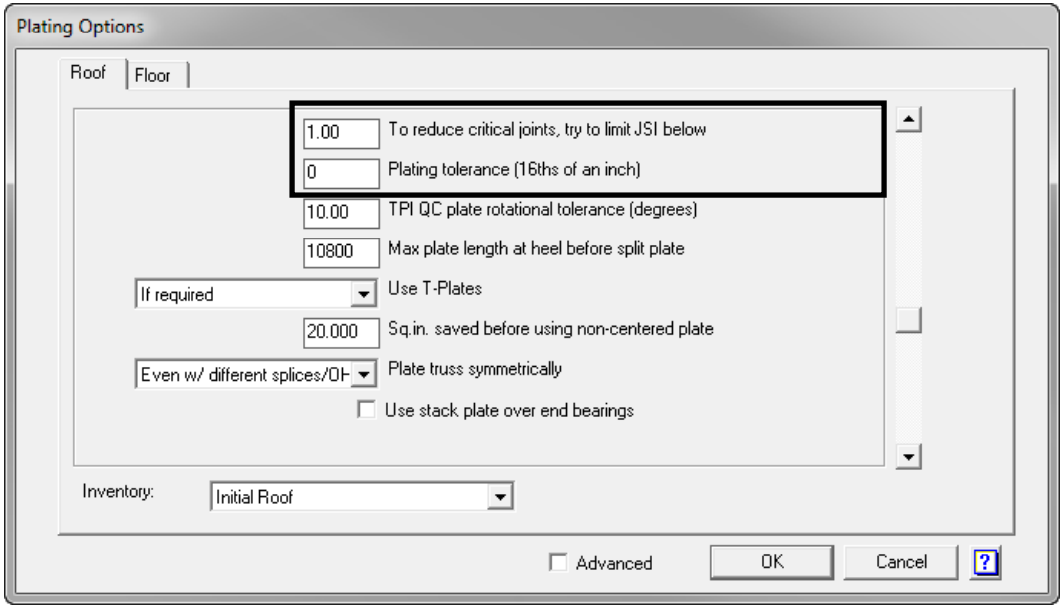
Split heel plate before changing gauge: On some shallow sloped trusses the program may require an exceptionally long length of plate to cover the scarf joint properly. If this option is checked the program will use two plates, if needed, at the heel before cycling to the next gauge plate. The maximum length of plate size the program will use is dependent upon the plate inventory.

Number of Plates Before Not Showing Label: This option allows the user to specify the maximum number of the same size plates a truss may have before the program suppresses its labels. This allows you to see the truss properly onscreen. Primarily used for gable trusses because the vertical web plates are the same size.

TPI QC Fabrication Tol. (%): The values for this option should be set to 20 for roof trusses and 11 for floor trusses.

Incremental Decrease of Fabrication Tol (%): This values range from 1-8% with a recommended setting of 4.

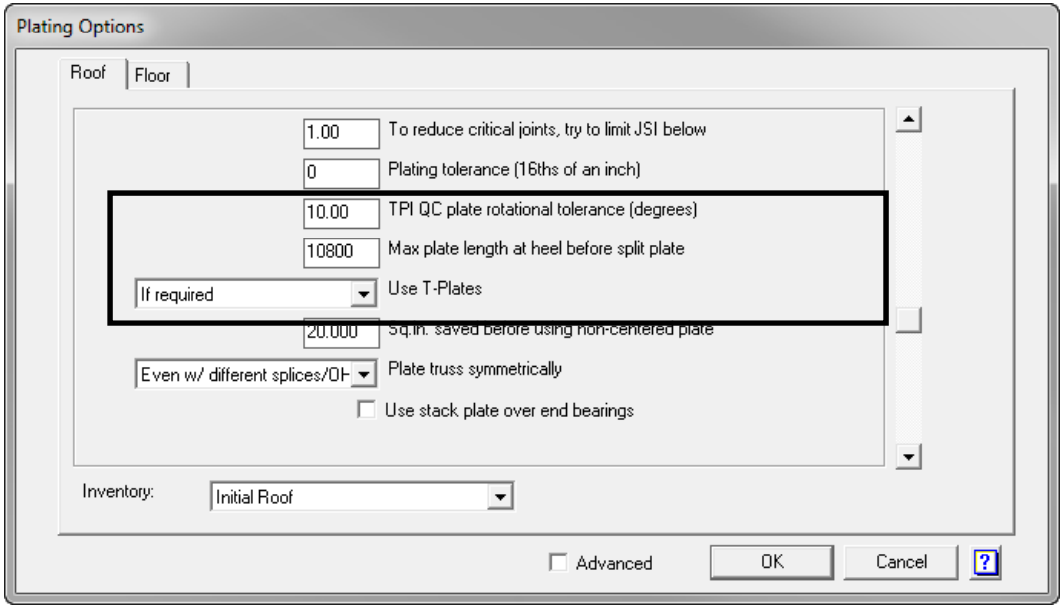
Plate Options (cont)



To reduce critical joints, try to limit JSI below: Defined as the ratio of the applied force to the allowable force for all plating requirements (grip, steel section and lumber bite). Enables the software to automatically increase a plate size when JSI is above the specified value. JSI is equal to or greater than 0.8 for the PPM (Plate Placement Method), and equal to or greater than 0.65 for the TCM (Tooth Count Method). The values range from 1-8%. The recommended setting is 4.

Plating tolerance (16ths of an inch): This value is normally set to zero. This is the amount (in sixteenths) that a connector plate may be moved from its specified position and still pass the structural checks required to hold the joint together. A value of zero indicates that the plate must be positioned exactly as shown in order to guarantee that the plate is sufficient. A value of “4” indicates that the plate can be shifted up to one-quarter inch in any direction and the plate will still pass all structural checks. For the absolute smallest plates, specify zero. To get larger plates, specify “4” or even larger numbers. This will allow the fabrication shop to have at least a quarter inch misplacement tolerance when they place the plates on the joint. MiTek recommends a setting of “4”. If a joint does not plate at all, specifying zero may allow the joint to plate.

Plate Options (cont)



TPI QC plate rotational tolerance (degrees): Controls the maximum rotation the program may use when plating a joint.

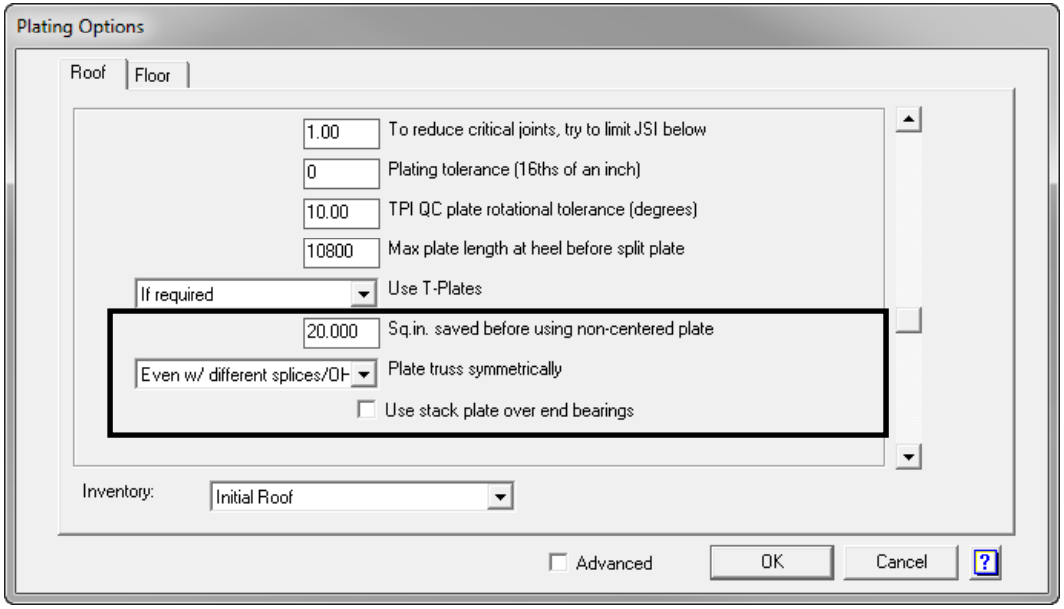
Max plate length at heel before split plate: This option allows the user to set the amount of change that can take place within a heel plate before a split plate is substituted.

Use T- Plates: This allows control over the way T-plates are used.

Available options are;

- **As in inventory** - the program will use T-plates as it would any other plate type.
- **If required** - the program will use T-plates only when required.
- **Always** - the program will use T-plates under any condition.
- **Never** - the program will ignore T-plates completely.

Plate Options (cont)



Sq In Saved Before Using Non-Centered Plate: This option specifies the amount of Square Inches that must be saved before a Non-Centered plate will be used. At 50 sq. in., all plates will be centered.

Plate truss symmetrically: Check this option to force the program to plate the truss with the same plates on both sides of the symmetric truss. This is a great feature to use if you want a symmetric truss carrying a concentrated load at only one point, for instance, to be plated symmetrically.

Available options are;

- **None** - prevents the program from plating symmetrically.
- **Only If totally symmetric** - plates the truss symmetrically only if the truss itself is symmetrical.
- **Even w/ different overhangs -** plates the truss symmetrically if the truss itself is symmetric except for different overhangs.
- **Even w/ different splices** - plates the truss symmetrically if the truss itself is symmetric except for different splices.
- **Even w/ different splices/OH's** - plates the truss symmetrically if the truss itself is symmetrical except for different overhangs AND different splices.

Use stack plate over end bearing: Stack plates allow the user to plate the area above the bearing on a top chord bearing floor truss to add support to the area. Turning on the feature in plate options would typically add a plate above the bearing to strengthen the chords and tie them together plus help with shear in a very limited fashion. This option adds value but is not a requirement.

Plate Options (cont)

Allow custom joint centers and plate locations: Can be found under **Setup / Manufacturer / Plate Options.**

Check the **Advanced** check box and click **Custom Joint Loc**.

NOTE: Advanced Plating Options will be explained in detail in **Advanced Plating** module.

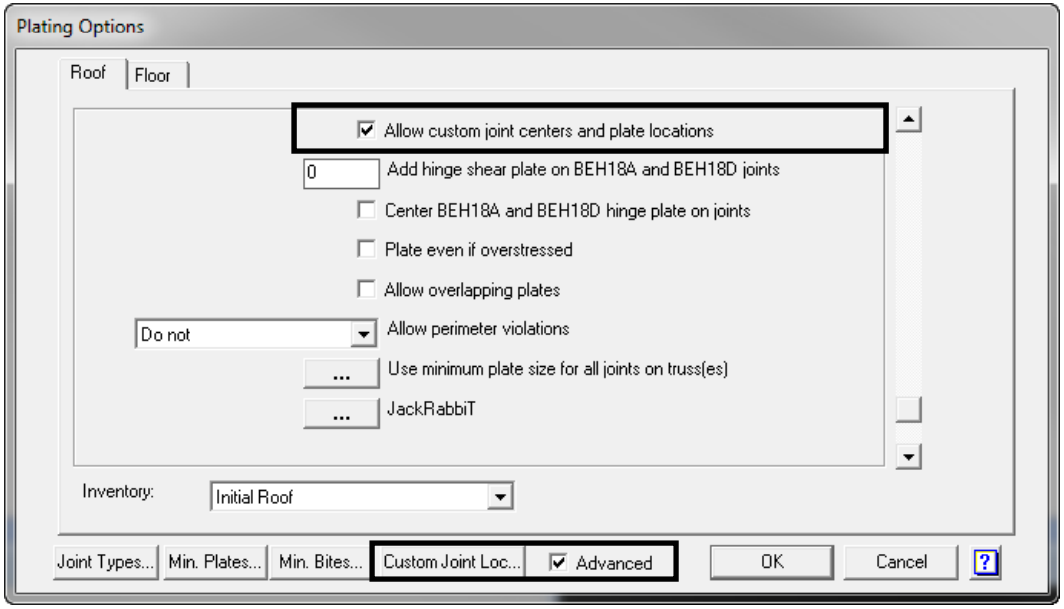
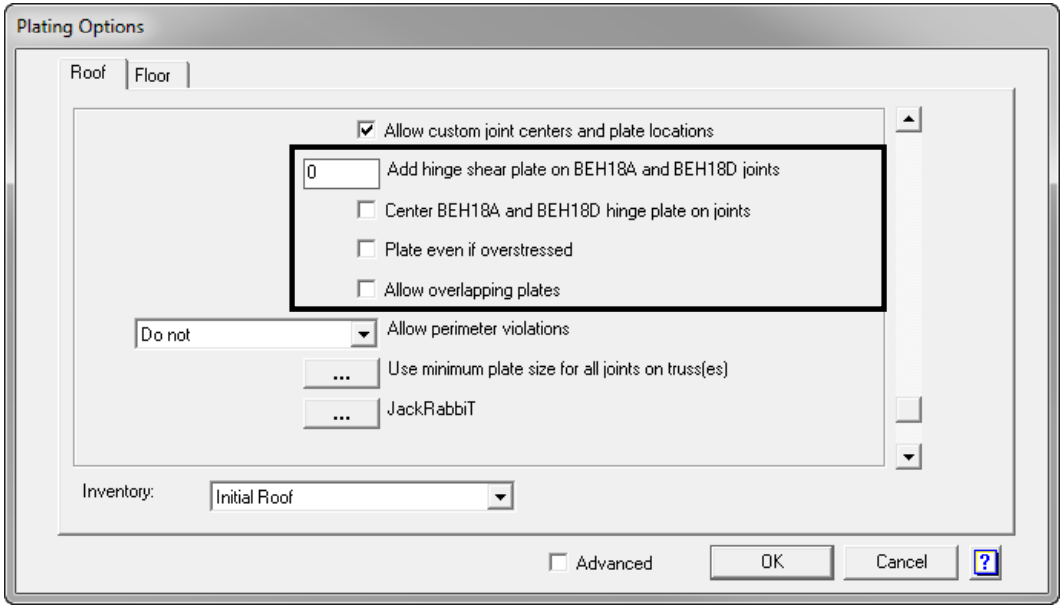


Plate Options (cont)



Add hinge shear plate on BEH18A and BEH18D joints : On these hinge joint types, when the upper chord is wider than the lower chord, this option allows for the placement of a shear plate. The shear plate is positioned below the hinge plate, on the narrow chord, perpendicular to the chord.

Available entries for this option are:

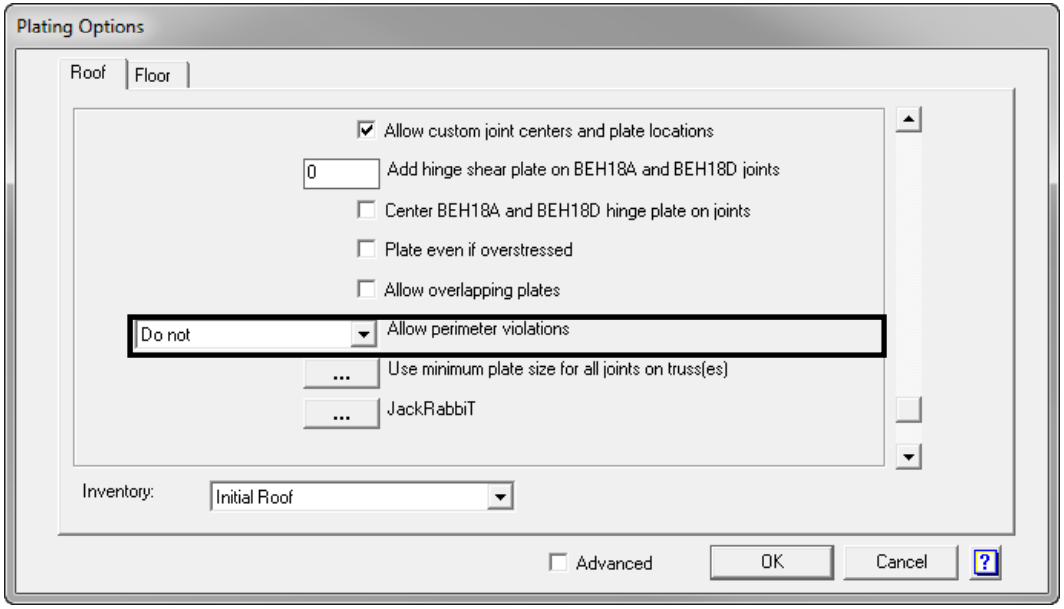
- **0** = None
- **1** = One face
- **2** = both faces

Center BEH18A and BEH18D hinge plate on joint :
Centers the hinge plate on the narrowest chord member in the joint.

Plate even if overstressed: This option causes the program to display plates on a truss that is overstressed.

Allow overlapping plates: This option allows plates to overlap when they are placed on a joint.

Plate Options (cont)



Allow perimeter violations: This option allows plates to extend into an attic room, a chase, or outside the profile of the truss; based on settings under the Perimeter Violations tab of Advanced\ Joint Types dialog

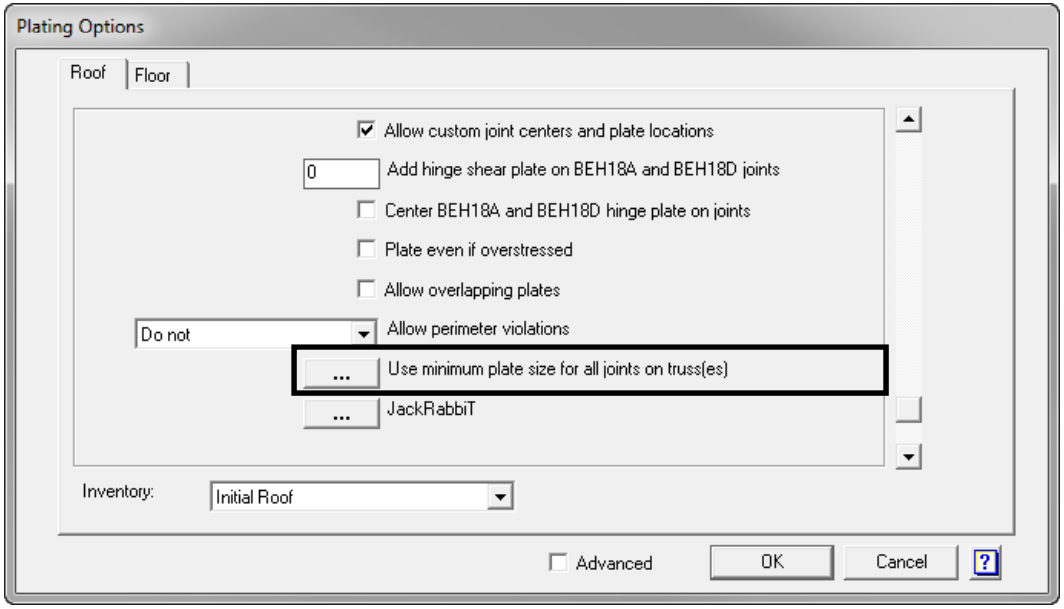
Available options are;

Do Not – Never use this option

Using joint type settings – Use based on the settings in Perimeter Violations under Joint types as described above

Disregard joint type settings – Use as needed regardless of the settings in Perimeter Violations as described above.

Plate Options (cont)



Use minimum plate size for all joints on truss(es): Allows the user to specify the truss type and the smallest plate to be used.

Available options are;

None – Will not use this option on any truss.

All – Will use this option on every truss.

Gable – Will only use this option on gable trusses.

Minimum plate size – Specify the smallest plate size to be used.

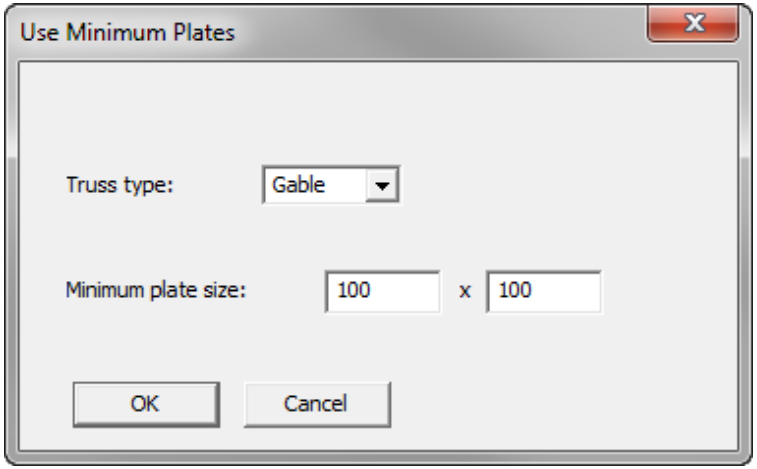
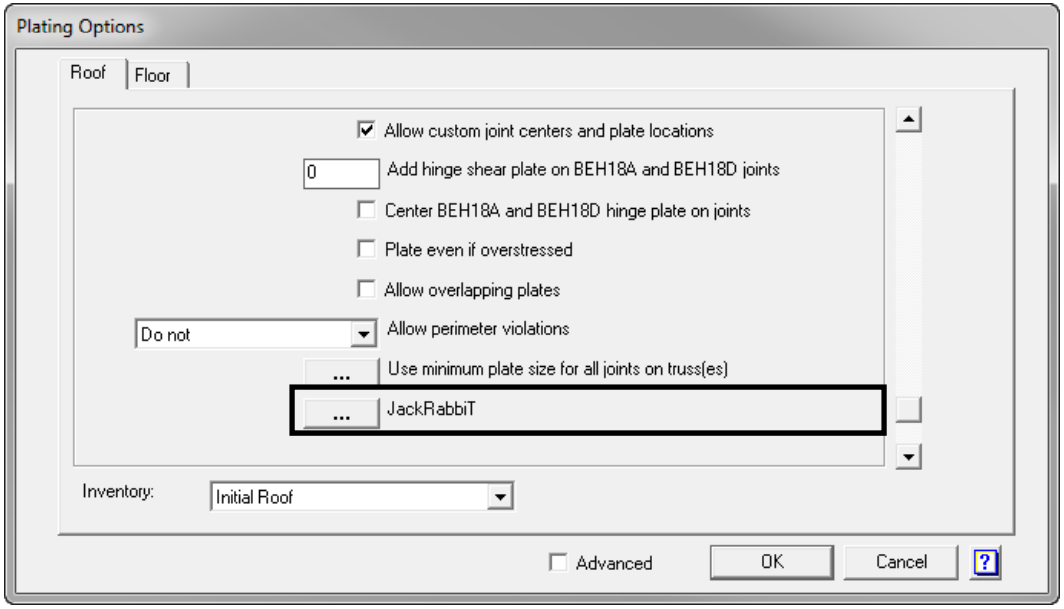
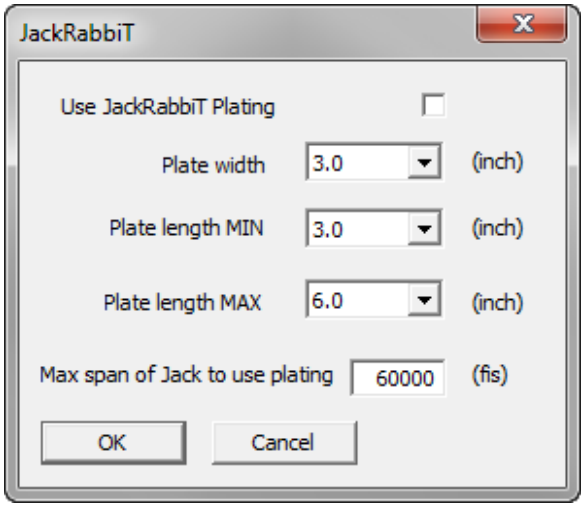


Plate Options (cont)





JackRabbiT: This option allows the user to specify plating information used by the JackRabbit coil-fed assembly machine

Use JackRabbiT Plating: When checked, the option is available.

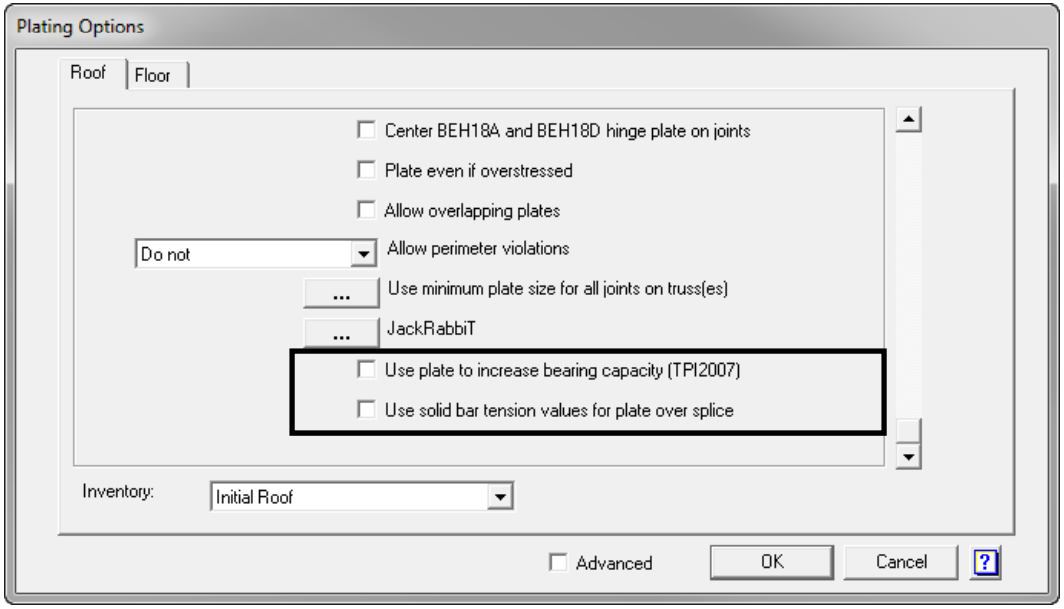
Plate width: The width of the connector coils to be used.

Plate length MIN: The shortest plate to be used.

Plate length MAX: The longest plate to be used.

Max span of Jack to use plating: Specifies the longest jack to be used on this machine.

Plate Options (cont)



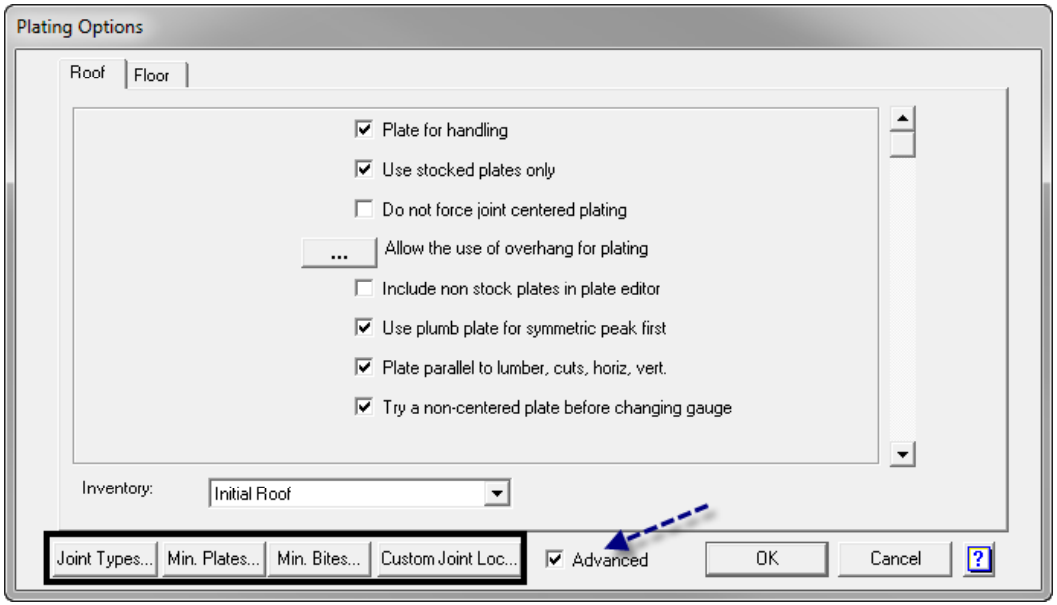
Use plate to increase bearing capacity (TPI2007): When manually modify a plate in the program to be within 1/4" of the bearing, then this option can be used to add capacity to the truss to resist crushing perpendicular to the grain at that bearing location. This feature helps lower required bearing sizes by using the plate. When this is checked on the program will not automatically place the plate over the bearing. This is something the user has to do manually.

Use solid bar tension values for plate over splices: This option uses a higher steel tension value for the plate if there is only metal over the splice, i.e. no slots over the splice. This can help to get smaller plates, but it is very important that the plate be placed as specified, otherwise a repair might be required. We recommend this option only be used when a splice joint is will not plate and not as a default setting, but it can be used to reduce plate sizes or gauge if you are willing to meet the quality criteria which may be significantly more stringent.

Advanced Plating

Overview

From **Setup > Manufacturer > Plate Options** the user can control the following options



- **Joint Types**
  - ✓Select plate type, minimum plate group and minimum bite group for selected joint types
  - ✓Prioritize Plate Orientations for selected joint types
  - ✓Prioritize Plate Types for selected joint types
  - ✓Allow Perimeter Violations for selected joint types
- **Minimum Plates**
  - ✓Specify minimum plate sizes for selected minimum plate groups
  - ✓Add / delete user specified chord sizes
  - ✓Add / delete user specified span ranges
  - ✓Create / copy / delete user specified minimum plate groups
- **Minimum Bites**
  - ✓Specify minimum plate sizes for selected minimum bite groups
  - ✓Add / delete user specified chord sizes
  - ✓Add / delete user specified span ranges
  - ✓Create / copy / delete user specified minimum bite groups
  - ✓Custom Joint Settings
  - ✓Allow specify plating preferences for selected joint types.

Advanced Plating

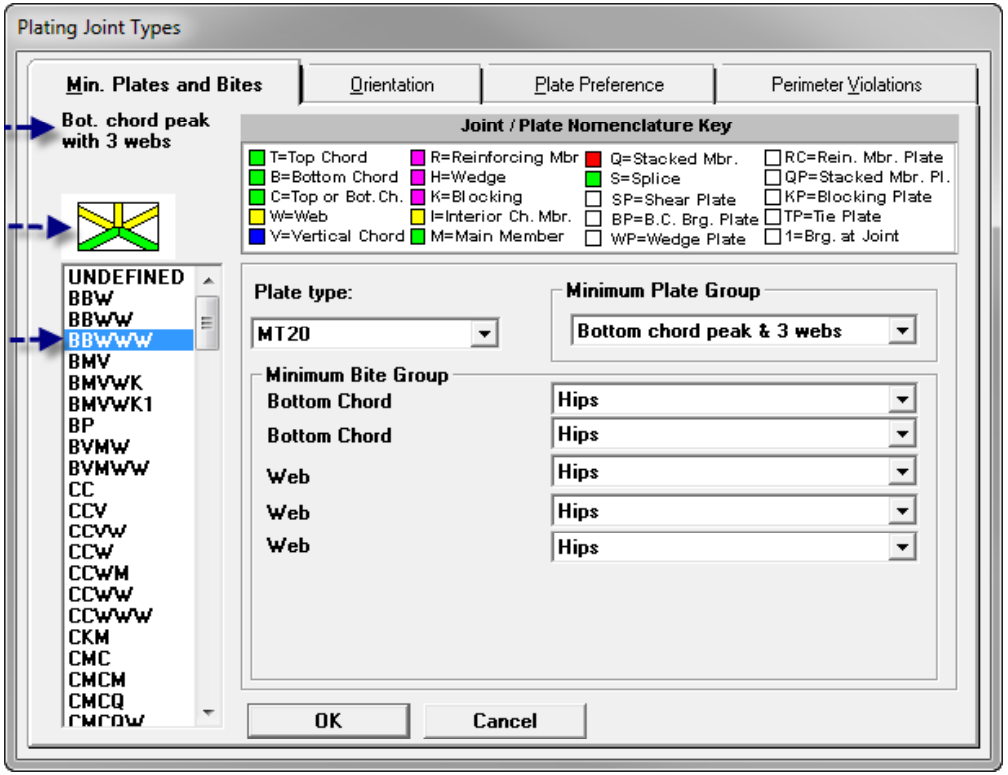
Plating Joint Types – Min Plates and Bites Tab

Use the **Joint/Plate Nomenclature Keys** to understand the joint types.

After selecting a joint type from the list, a graphic will display the joint type.

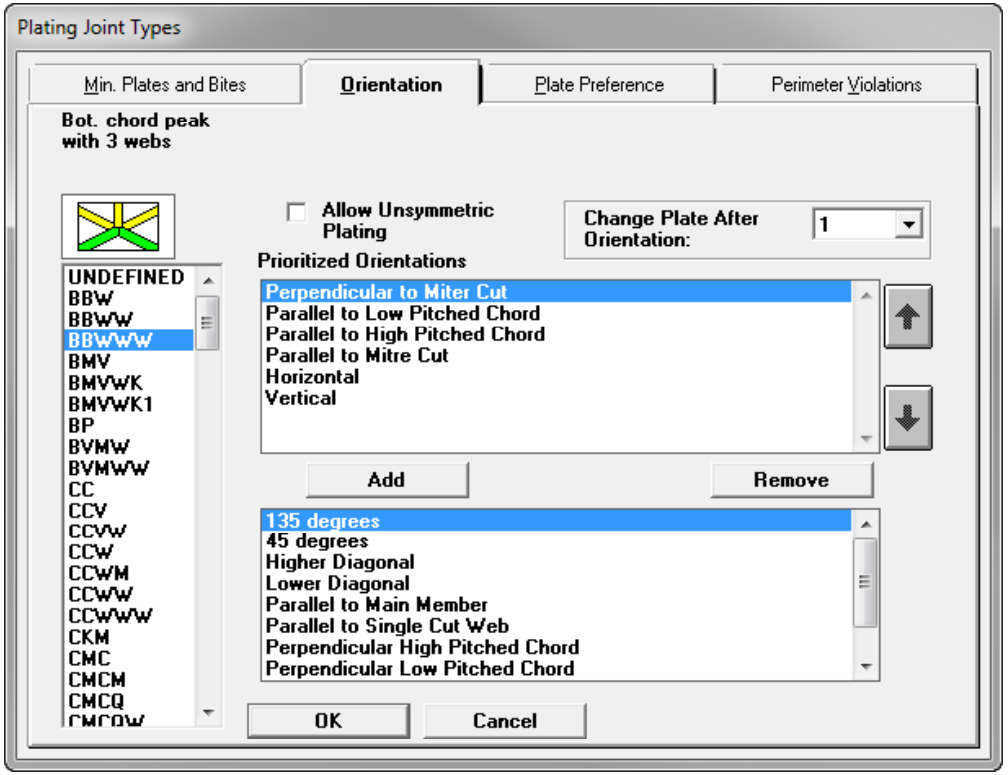
Using the drop down list the user will be able to specify the following for the selected joint type:

- preferred Plate type.
- Minimum Plate Group (controls minimum plate sizes for different sizes of the chords and span ranges)
- Minimum Bite Group for each member specified in selected joint type (controls minimum bite sizes for different sizes of the chords and span ranges).



Advanced Plating

Plating Joint Types – Orientation Tab



Allow Unsymmetric Plating – by checking the box, the user will allow unsymmetric plating on selected joint types.

Change Plate After Orientation – shows amount of plates to be checked for each prioritized orientation before it will move to the next prioritized orientation.

Prioritized Orientations – Plating orientation options to be used by the program for selected joint type.

NOTE: The program will use the options in the order listed.

Click **Add** to move all highlighted items to the **Prioritized Orientation** panel. Selected items will be removed from the lower panel.

Use the large up and down arrows or left mouse button to select item in the **Prioritized Orientation** panel.

Click **Remove** to eliminate highlighted items from the **Prioritized Orientations** list. Selected items will be moved to the lower panel.

Advanced Plating

Plating Joint Types – Plate Preferences Tab

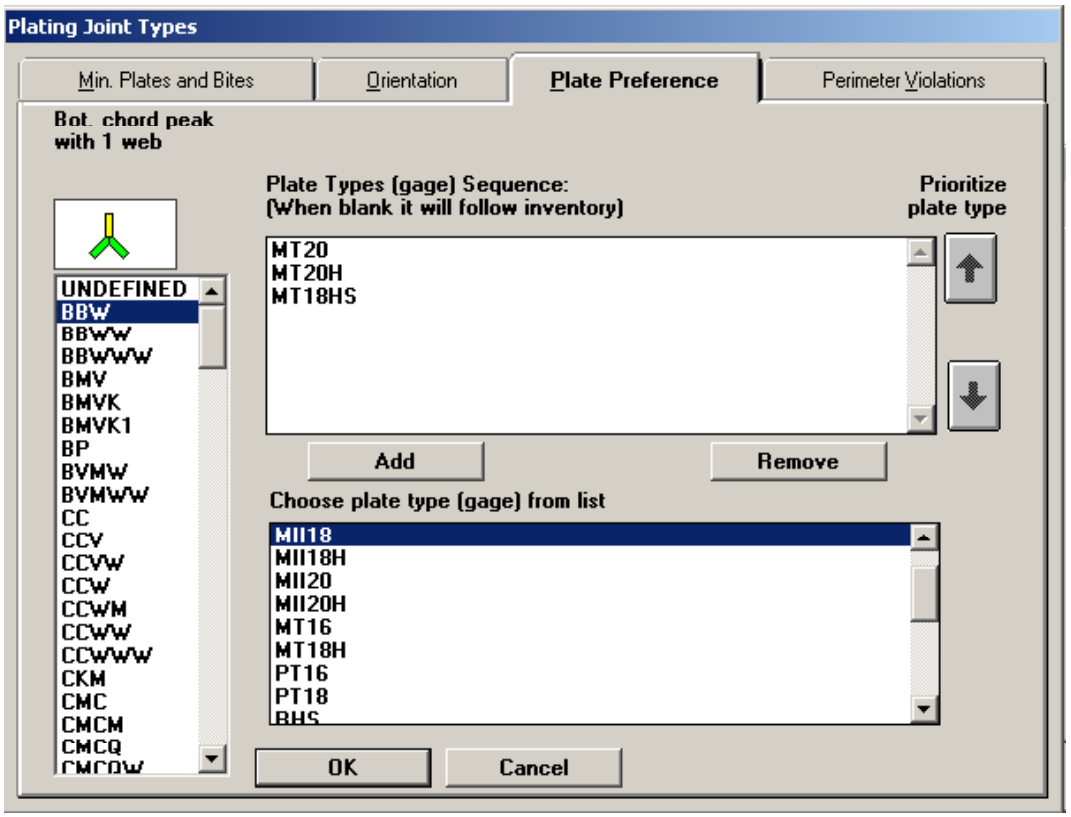
Plate Types (gage) Sequence – Prioritize plate types usage for selected joint type

Click **Add** to move all highlighted plate types to the **Plate Types (gage) Sequence** panel. Selected plate types will be removed from the lower panel

Use the large up and down arrows or left mouse button to select item in the **Plate Types (gage) Sequence** panel.

NOTE: The program will use the options in the order listed. When blank, the program will follow the order of inventory.

Click **Remove** to eliminate highlighted items from the **Plate Types (gage) Sequence** list. Selected items will be moved to the lower panel.



Advanced Plating

Plating Joint Types – Perimeter Violations Tab

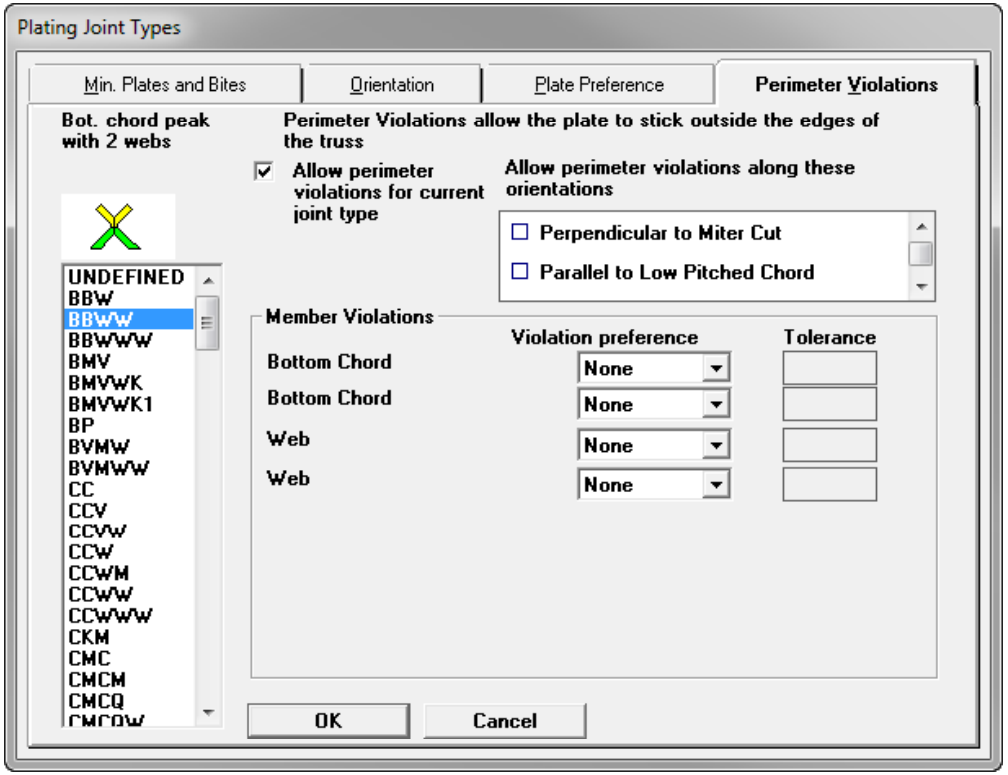
Perimeter Violations – Allow plates to violate the border of the truss for selected joint type.

NOTE: All options are unavailable until the Allow perimeter violations for current joint box is checked .

Allow perimeter violations along these orientations – Allows the user to select which prioritized orientations may have perimeter violations.

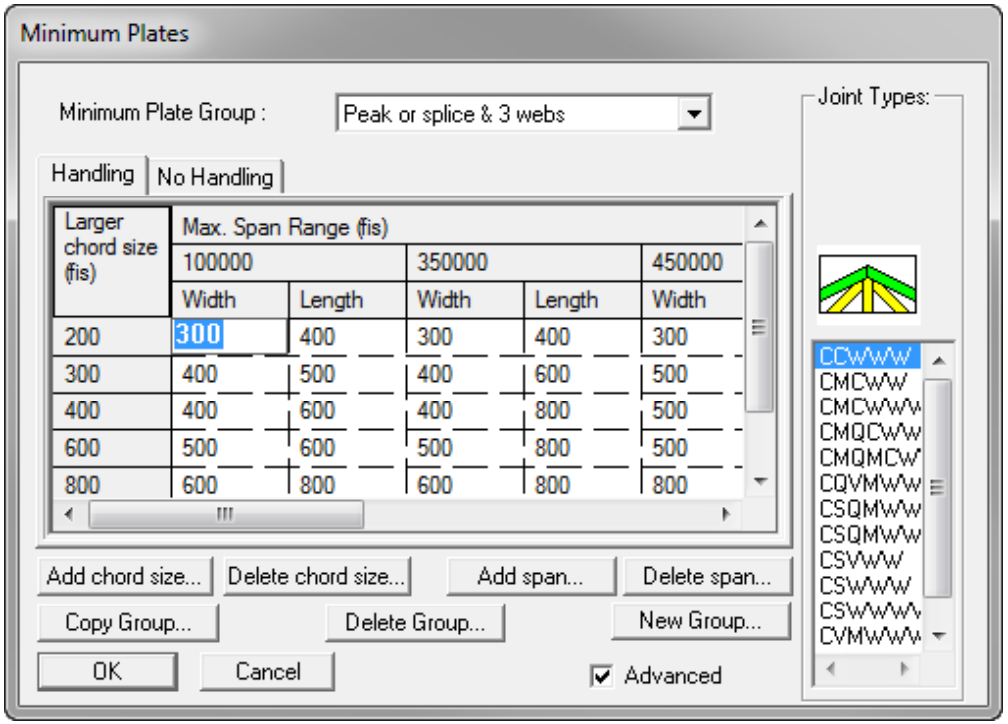
Member Violations - Allows the user to specify preferred members for perimeter violations for selected joint type.

Tolerance - displays the maximum allowable plate violation for preferred members of selected joint type.



Advanced Plating

Min. Plates



Minimum Plate Group - Select group from the drop down list.

Joint Types - Lists all available joint types for selected Minimum Plate Group.

Advanced – By checking this box the program will display additional options for this window

Add chord size - Allows the user to add custom material sizes to the Larger chord size list

Delete chord size – Removes only custom material sizes added by the user. A material must be highlighted to delete.

Add span – Allows the user to add span ranges to the Max Span Range list.

Advanced Plating

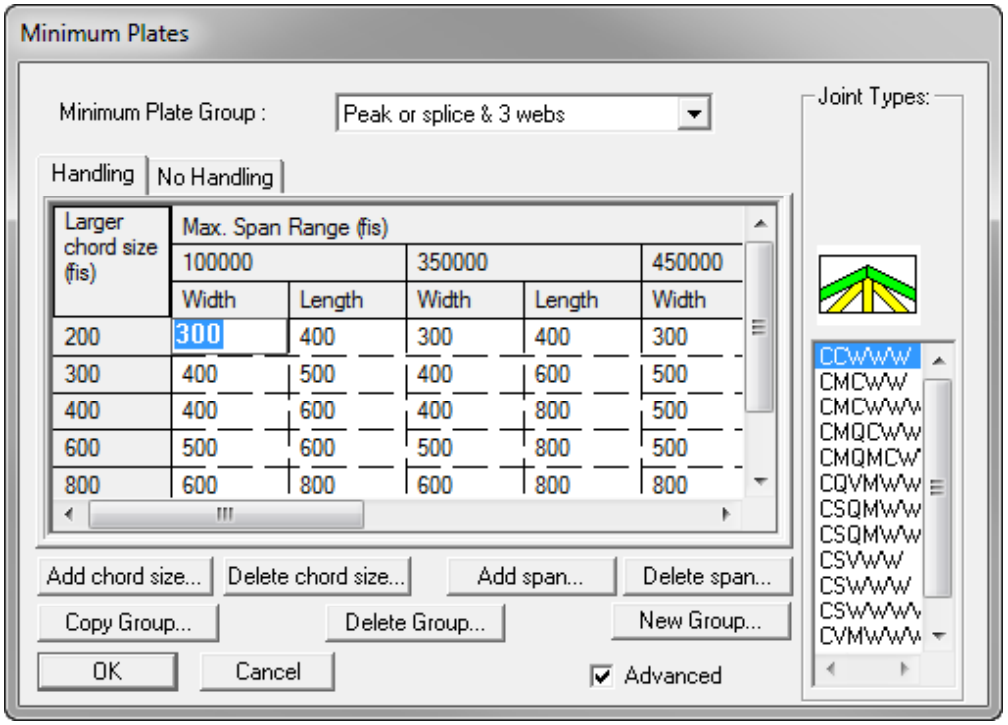
Min. Plates (cont)

Delete Span – Remove s only custom span ranges added by the user. A span must be highlighted to delete

Copy Group – Will copy an existing Minimum Plate Group to new Minimum Plate Group named by user.

Delete Group – Will delete only custom Minimum Plate Groups. Group must be selected in Minimum Plate Group list to delete

New Group - Will create a new Minimum Plate Group, name of the group will be chosen by user.



Advanced Plating

Min. Bites

Minimum Bite Group - Select group from the drop down list.

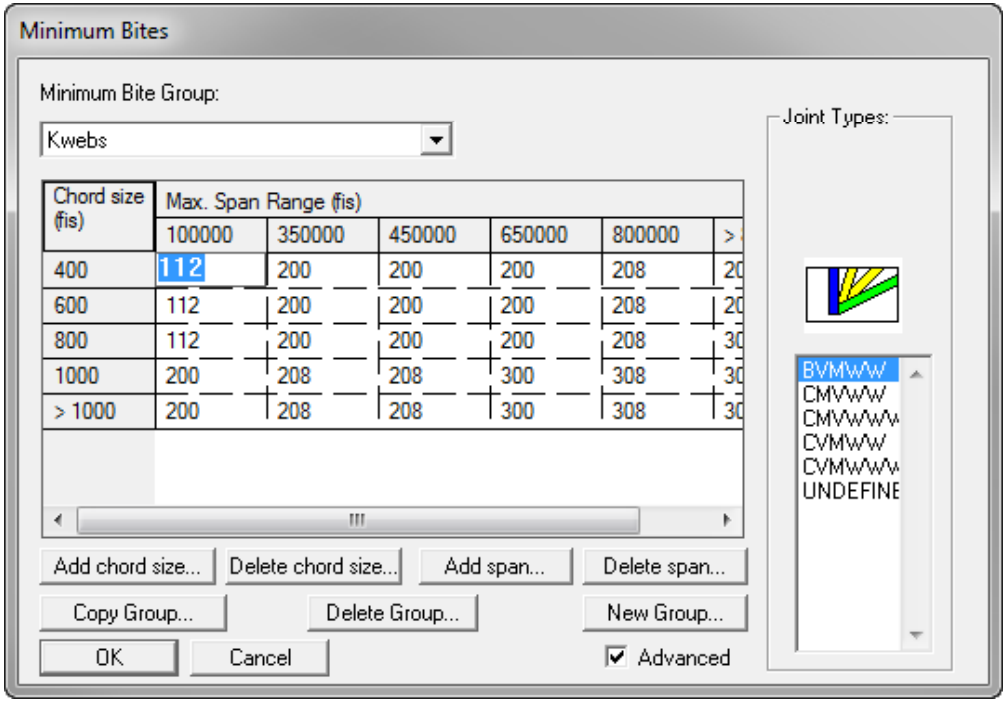
Joint Types - Lists the available joint types for the Minimum Bite Group.

Advanced – By checking this box the program will display additional options for this window

Add chord size - Allows the user to add custom material sizes to the Chord size list

Delete chord size – Removes only custom material sizes added by the user. A material must be highlighted to delete.

Add span – Allows the user to add span ranges to the Max Span Range list.



Advanced Plating

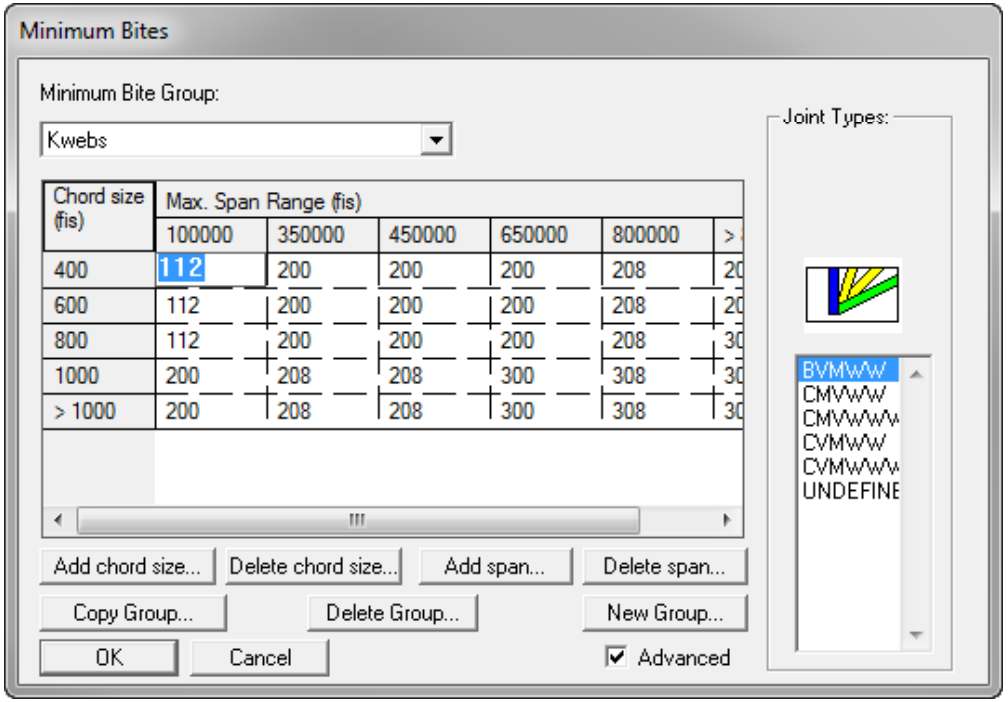
Min. Bites (cont)

Delete Span – Removes only custom span ranges added by the user. A span must be highlighted to delete

Copy Group – Will copy an existing Minimum Bite Group to new Minimum Bite Group named by user.

Delete Group – Will delete only custom Minimum Bite Groups. Group must be selected in Minimum Bite Group list to delete

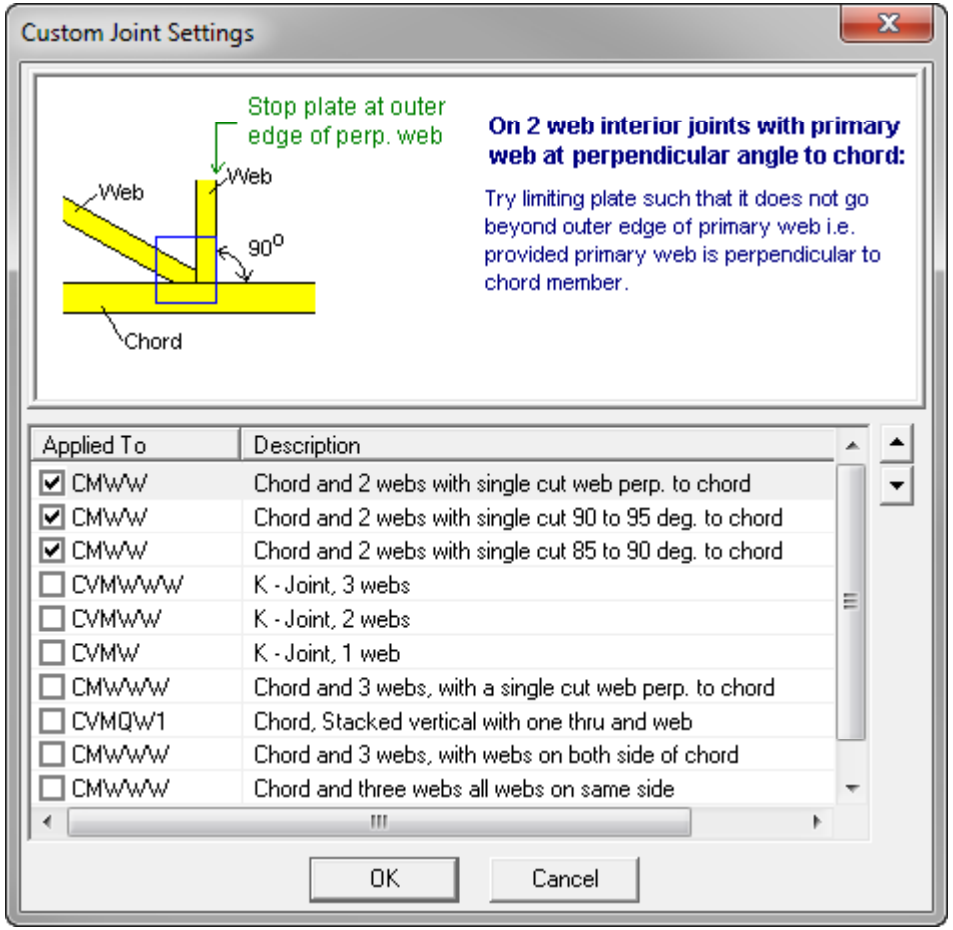
New Group - Will create a new Minimum Bite Group, name of the group will be chosen by user.



Advanced Plating

Custom Joint Settings

By checking joint types, in the **Applied To** column, a user will allow the program to plate selected joints, as shown on the picture, for highlighted joint type.

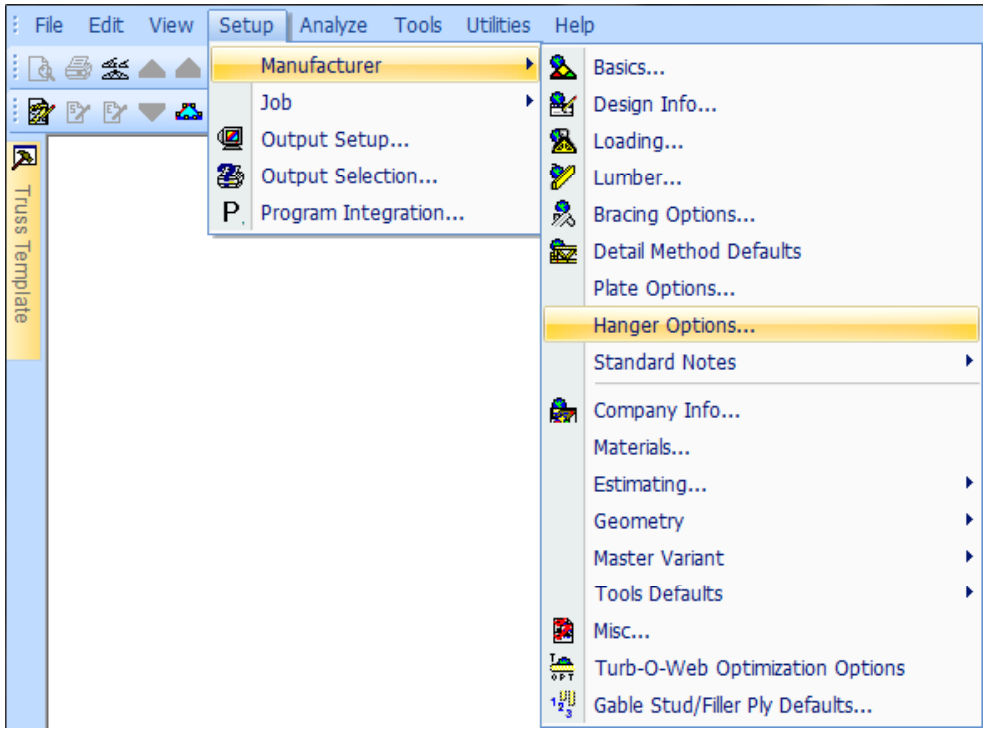

Custom Joint Settings
Stop plate at outer edge of perp. web
Web
Web
90°
Chord
On 2 web interior joints with primary web at perpendicular angle to chord:
Try limiting plate such that it does not go beyond outer edge of primary web i.e. provided primary web is perpendicular to chord member.
Applied To
Description
CMWW
Chord and 2 webs with single cut web perp. to chord
CMWW
Chord and 2 webs with single cut 90 to 95 deg. to chord
CMWW
Chord and 2 webs with single cut 85 to 90 deg. to chord
CVMWWW
K - Joint, 3 webs
CVMWW
K - Joint, 2 webs
CVMW
K - Joint, 1 web
CMWWW
Chord and 3 webs, with a single cut web perp. to chord
CVMQW1
Chord, Stacked vertical with one thru and web
CMWWW
Chord and 3 webs, with webs on both side of chord
CMWWW
Chord and three webs all webs on same side
OK
Cancel

Hanger Options

The **Hanger Options** screen in MiTek Engineering has been moved.

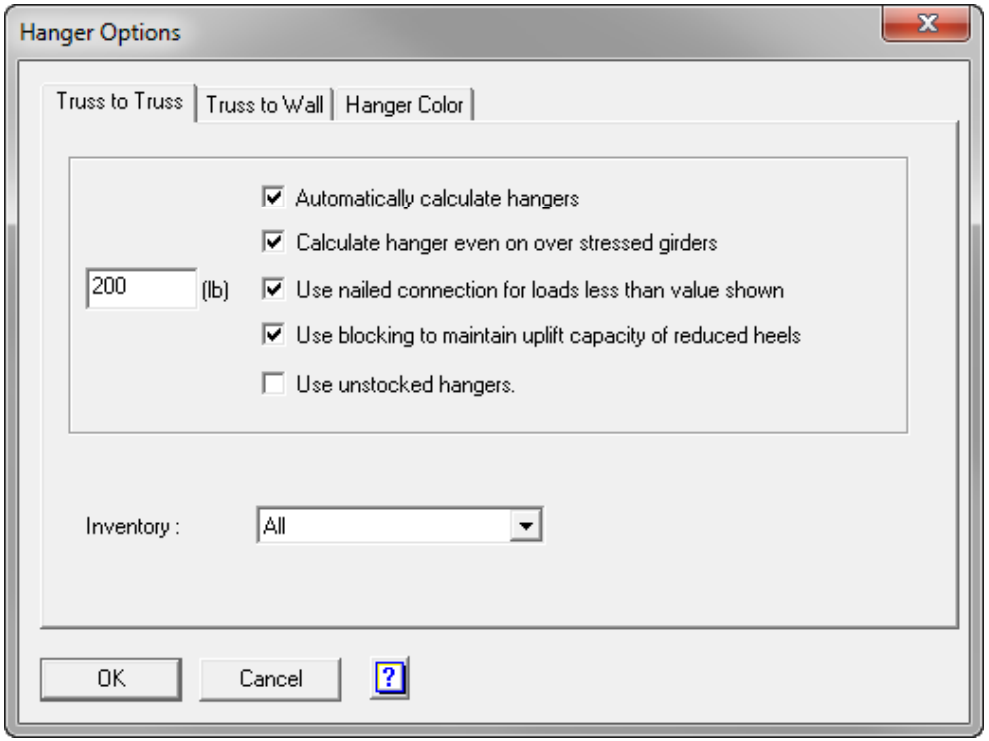
The previous way to access **Hanger Options** screen in MiTek Engineering was from **Setup > Manufacturer > Materials > Hangers.**

You now access this screen by from **Setup > Manufacturer > Hanger Options.**



Hanger Options

Truss to Truss



The **Hanger Options** dialog allows the user to determine how hangers will be used on trusses.

Automatically Calculate Hangers: The program will automatically place hangers on trusses that are designated as girders and have trusses touching.

Calculate Hanger Even On Over Stressed Girders: The program will place hangers on girders that are overstressed.

Use Nailed Connection For Loads Less Than … : The program will assume a truss with loads below 200 pounds (the current default) will be toe nailed and not require a hanger. This value can be changed to any value that conforms to local codes.

Use Blocking To Maintain Uplift Capacity Of Reduced Heels: The program will place blocks on low heels to strengthen them when hangers are applied.

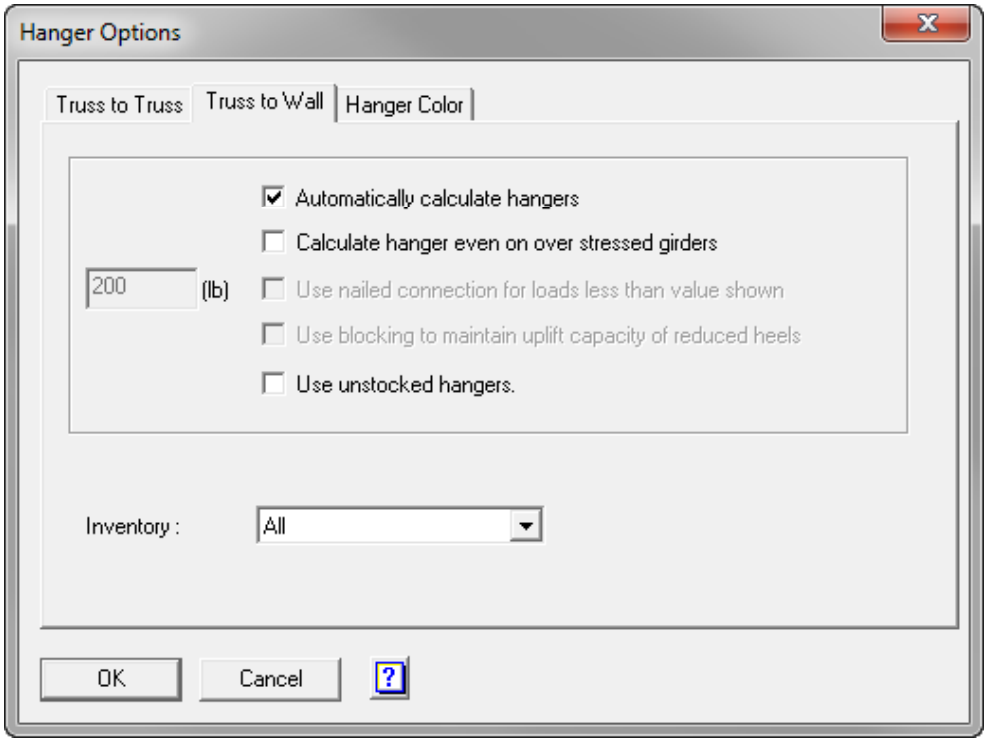
Use Unstocked Hangers: The program will apply hangers that are not in your current inventory.

Inventory - Choose between inventories of hanger applications.

Click **OK** to save your changes, or **Cancel** to exit without saving changes.

Hanger Options

Truss to Wall



The **Hanger Options** dialog allows the user to determine how hangers will be used.

Automatically Calculate Hangers: The program will automatically place hangers on trusses that are designated as girders and have a trusses touching.

NOTE: With this option checked, a message of **Not All Hangers Designed** will be displayed on gable analysis

Calculate Hanger Even On Over Stressed Girders: The program will place hangers on girders that are overstressed. Unchecked but available

Use Unstocked Hangers: The program will apply hangers that are not in your current inventory.

Inventory - Choose between inventories of hanger applications.

Click **OK** to save your changes, or **Cancel** to exit without saving changes.

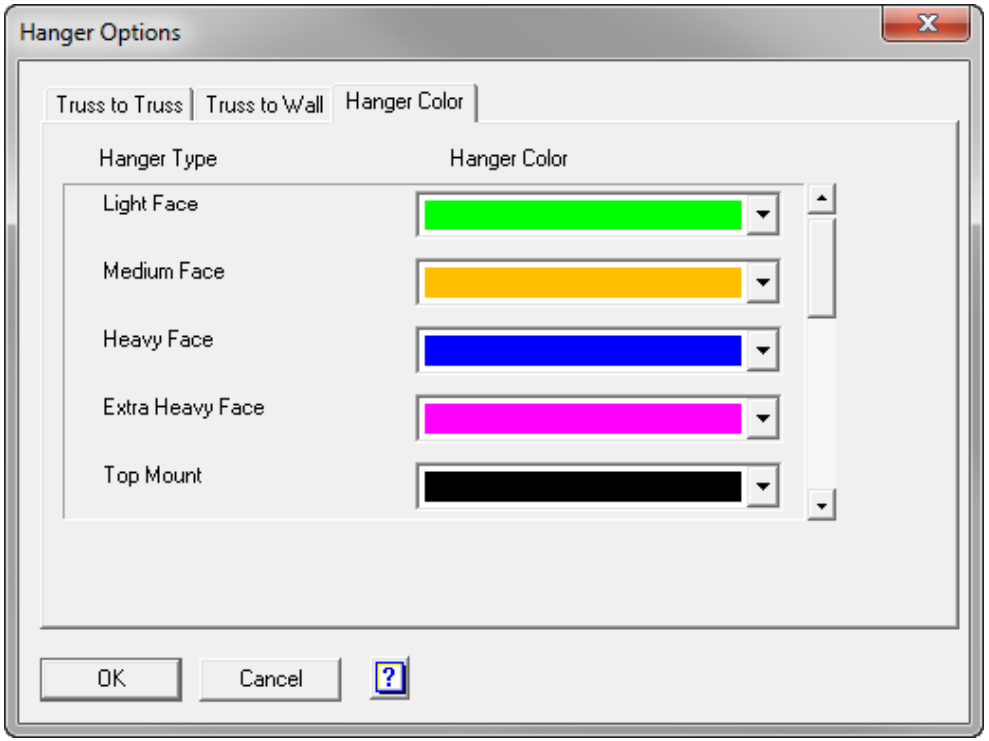
Hanger Options

Hanger Colors

Allows the user to customize hanger display colors.

Click the dropdown arrow and choose a color.

See next page for Hanger Color comparison in SAPPHIRE™ Materials.



Hanger Options

Hanger Color (cont)

The **Hanger Colors** screen in MiTek Engineering is equivalent to a function of the **Item Master** screen in SAPPHIRE™ Materials.

To access the **Color Schemes** screen in MiTek Engineering, select **Setup > Manufacturer > Hanger Options** and select the **Hanger Color** tab

Figure 42: Hanger Options Screen in MiTek Engineering

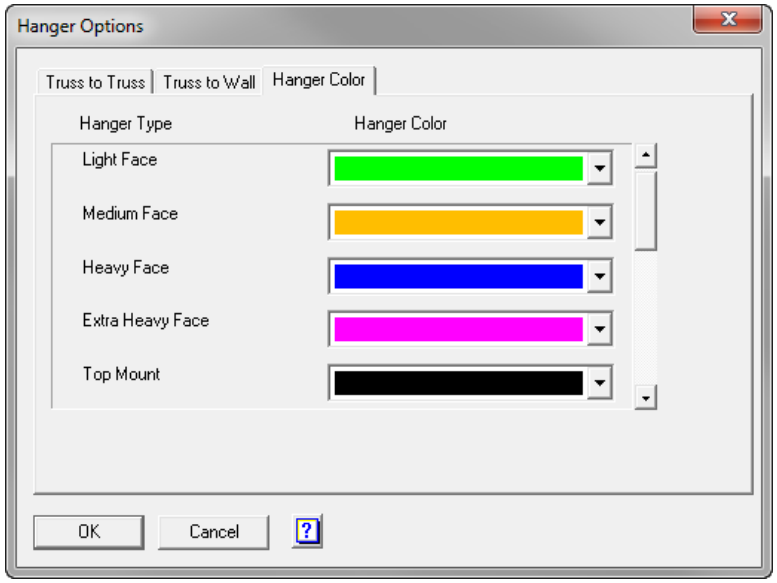
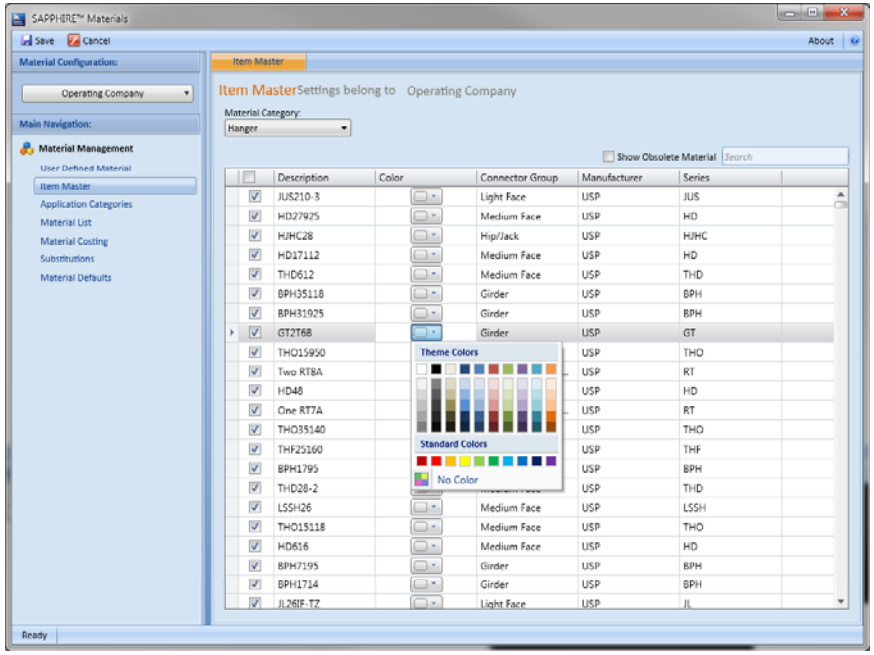


Figure 43: Scheme Function on Item Master Screen in SAPPHIRE Materials



Standard Notes

Engineering Drawing Notes

Initially, this dialog box will be blank.

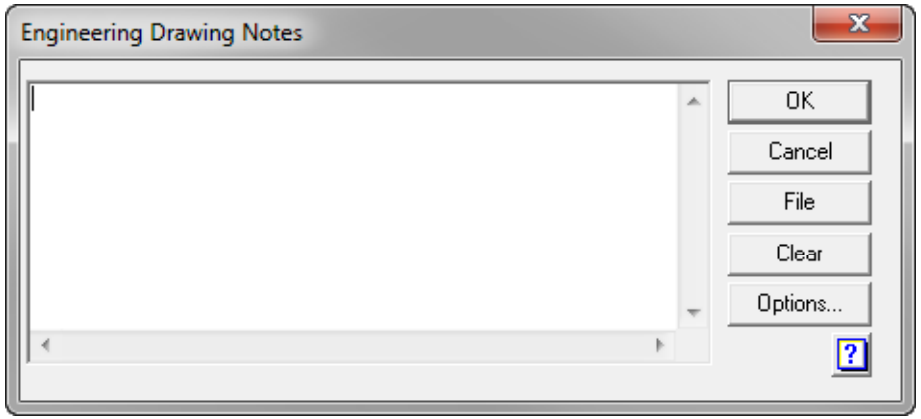
Enter your own text, or choose from the default notes list.

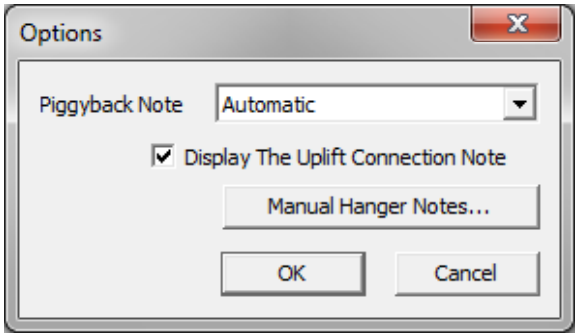
If you enter your own text, simply type the note as you want it to appear and then click **OK**.

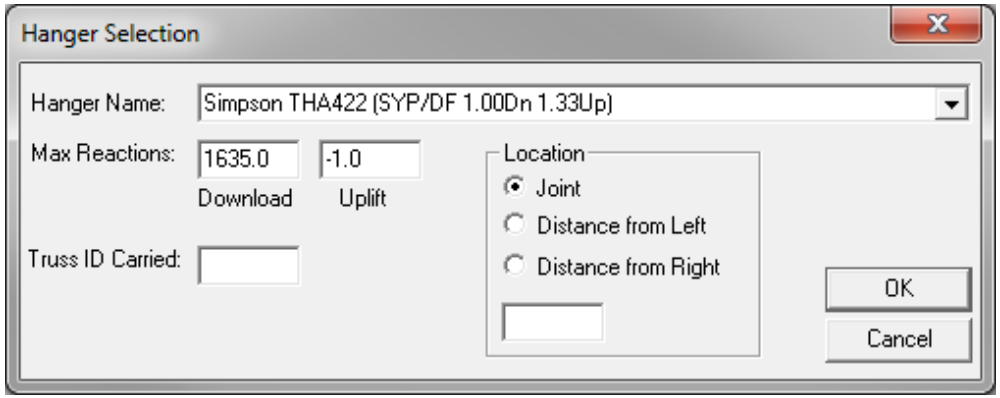
The note will then be printed on your engineering drawing.

Click the **Options** button to display Piggyback notes.

Click the **Manual Hanger Notes** button to select a hanger from the pull down list. Selecting a hanger will adjust the information displayed for that hanger.







Standard Notes

Shop Drawing Notes

Initially, this dialog box will be blank.

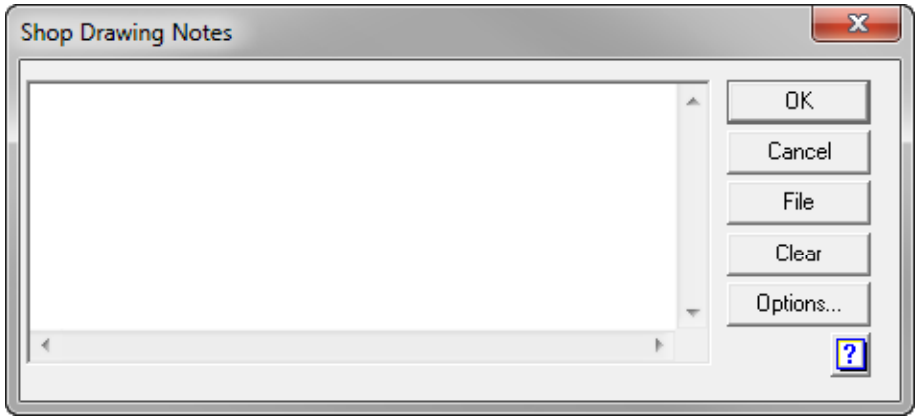
Enter your own text, or choose from the default notes list.

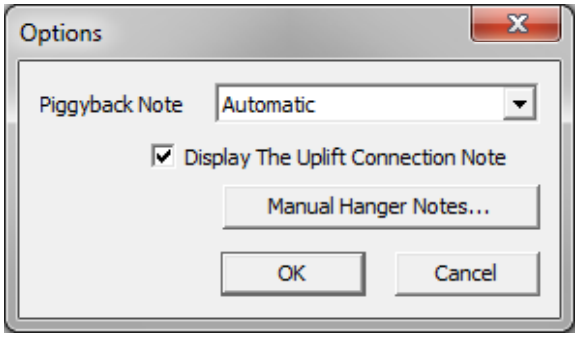
If you enter your own text, simply type the note as you want it to appear and then click **OK**.

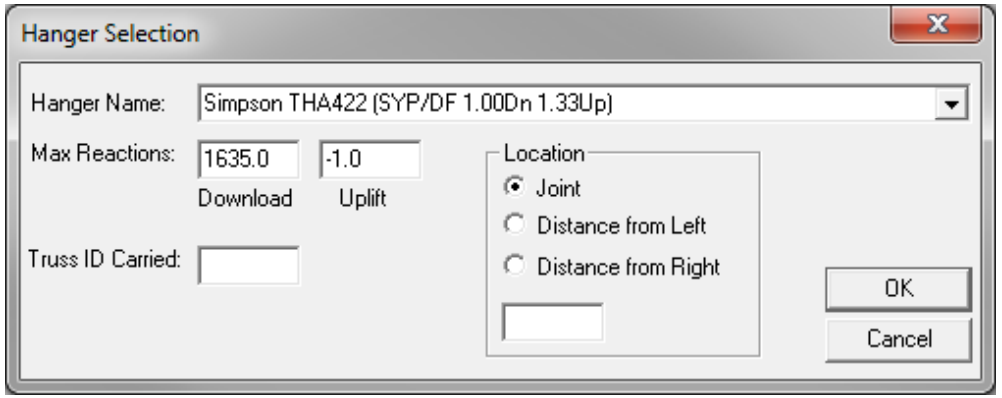
The note will then be printed on your engineering drawing.

Click the **Options** button to display Piggyback notes.

Click the **Manual Hanger Notes** button to select a hanger from the pull down list. Selecting a hanger will adjust the information displayed for that hanger.







Company Info

The **Company Info** dialog box contains the name, address, telephone number and other information about your truss plant. Enter the information in the appropriate field and click **OK** to save.

The **Company** name, if entered, will appear on your output directly below the title of the drawing. Also, the **Name** and **Fax** fields are optional and may be left blank. Typically, the **Name** field is the name of the designer, or computer operator.

NOTE: The information in this dialog box is necessary when sending trusses or other information to MiTek via Link. If this information is not entered, the program will instruct you to do so when entering the Send program and attempting to connect to MiTek.

Materials

Getting Started

This section explains the similarities and differences between the current **Engineering Materials** system and the new **SAPPHIRE™** Materials system.

This table shows the name of a screen in MiTek Engineering with the name of the equivalent screen in **SAPPHIRE™** Materials.

The functions of these screens will be explained more fully in the following pages.

Table 1: Screen Equivalents

MiTek Engineering Screen	SAPPHIRE Materials Screen
Groups Setup	Material List
Material Categories	Item Master
Material Setups	Material Defaults
Manufacturer Pricing Groups	Material Costing
Substitution Rules	Substitutions
Color Schemes	Item Master
Manufacturer Plates	Material Costing
Plate Prices	Material Costing
Plating Inventory	Item Master AND Material List
Manufacturer Hanger Inventory	Material Costing
Hanger Prices	Material Costing
Hanger Inventory	Item Master AND Material List
Hanger Colors	Item Master

Materials

Getting Started (cont)

The following table lists common tasks and the screen on which these tasks should be started in **SAPPHIRE™** Materials.

Table 2: Common Task Starting Points

Task	Starting Point
Change cost	Material Costing
Add a non-inventoried material	Item Master
Add an inventoried material to a material list (lumber group)	Material List
Change items included in a material list (lumber group)	Material List
Change substitution rules	Substitutions
Modify lumber start points or fixities	Material Defaults
Create a hybrid or odd-size material	User Defined Material

Materials

Group Settings – Material List

The **Groups Setup** screen in MiTek Engineering is equivalent to the **Material List** screen in SAPPHIRE Materials.

Processes that used to begin in **Groups Setup** will now begin in **Material List**.

Figure 1: Groups Setup Screen in MiTek Engineering

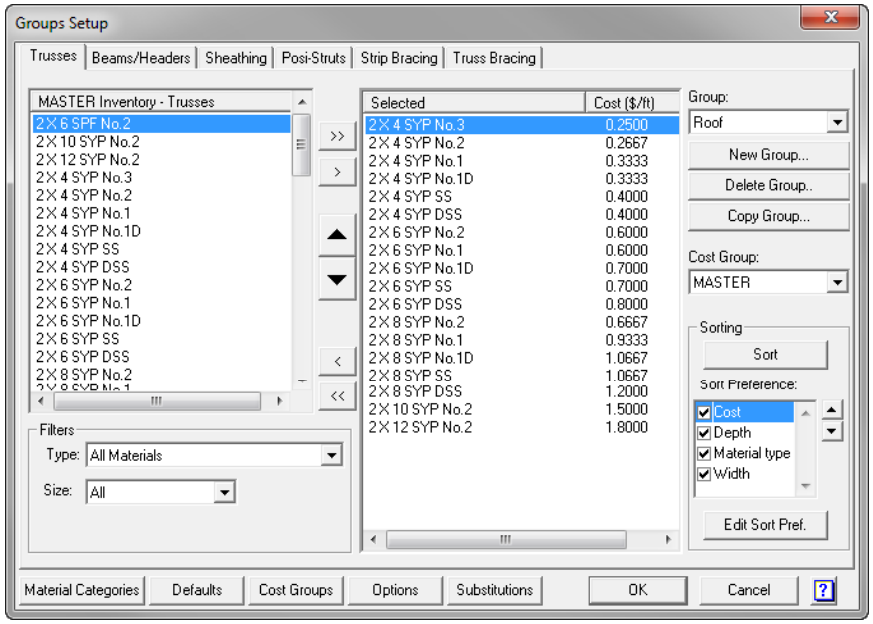
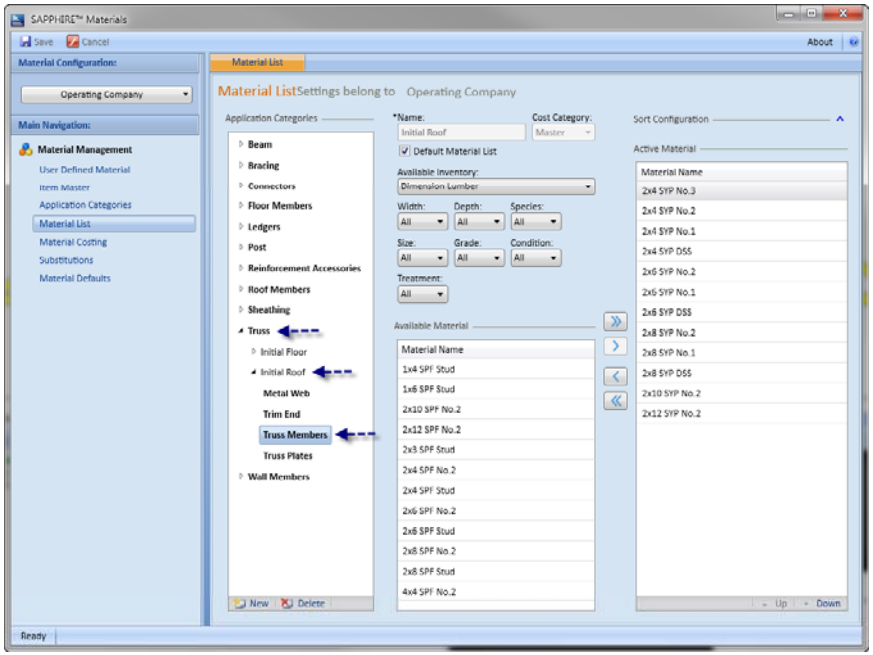


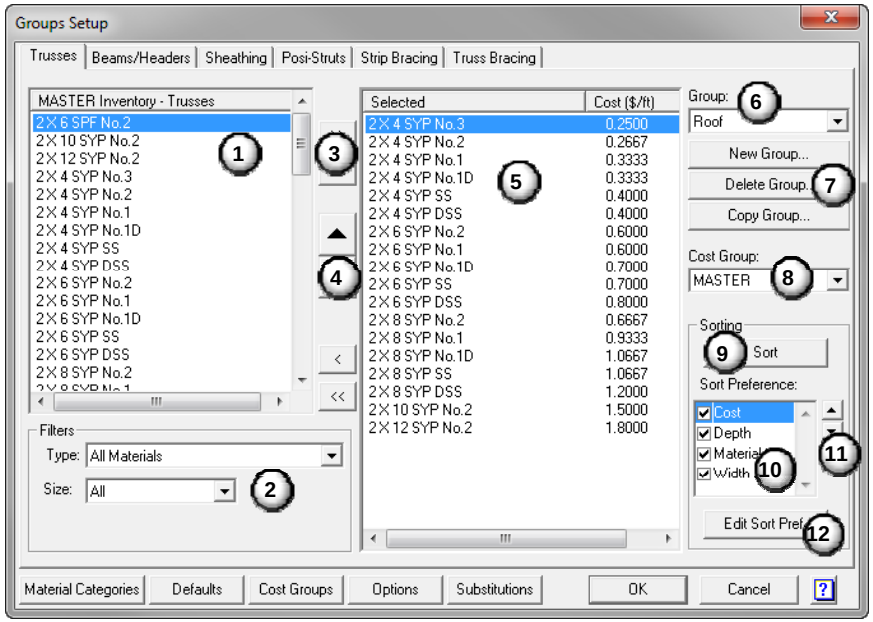
Figure 2: Material List Screen in SAPPHIRE Materials

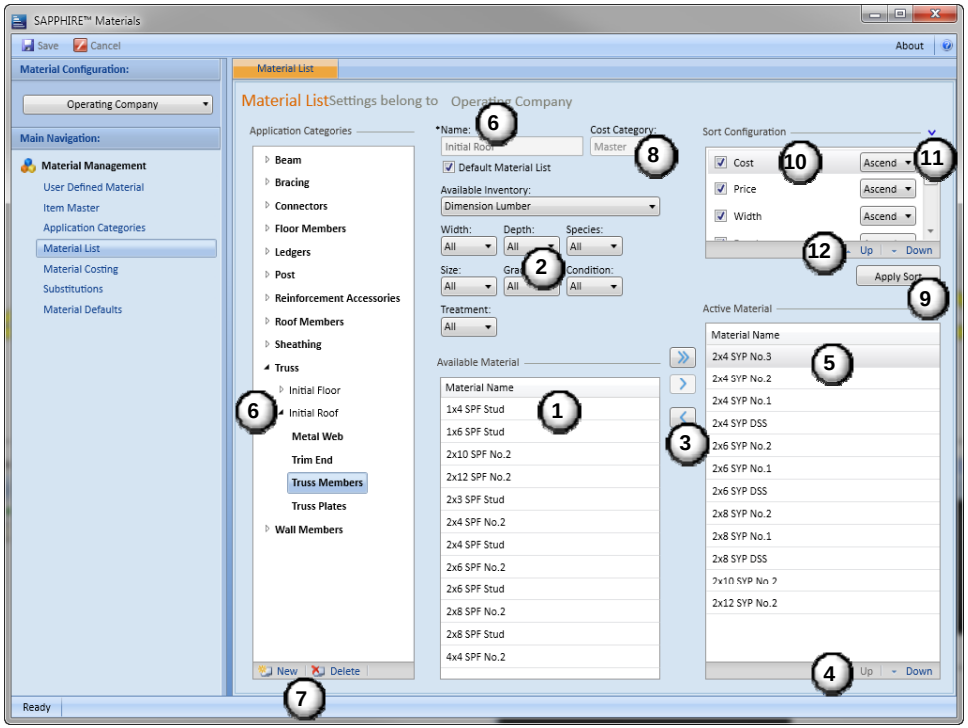


Materials

Group Settings Comparison

Figure 3: Screen Comparison, Groups Setup to Material List





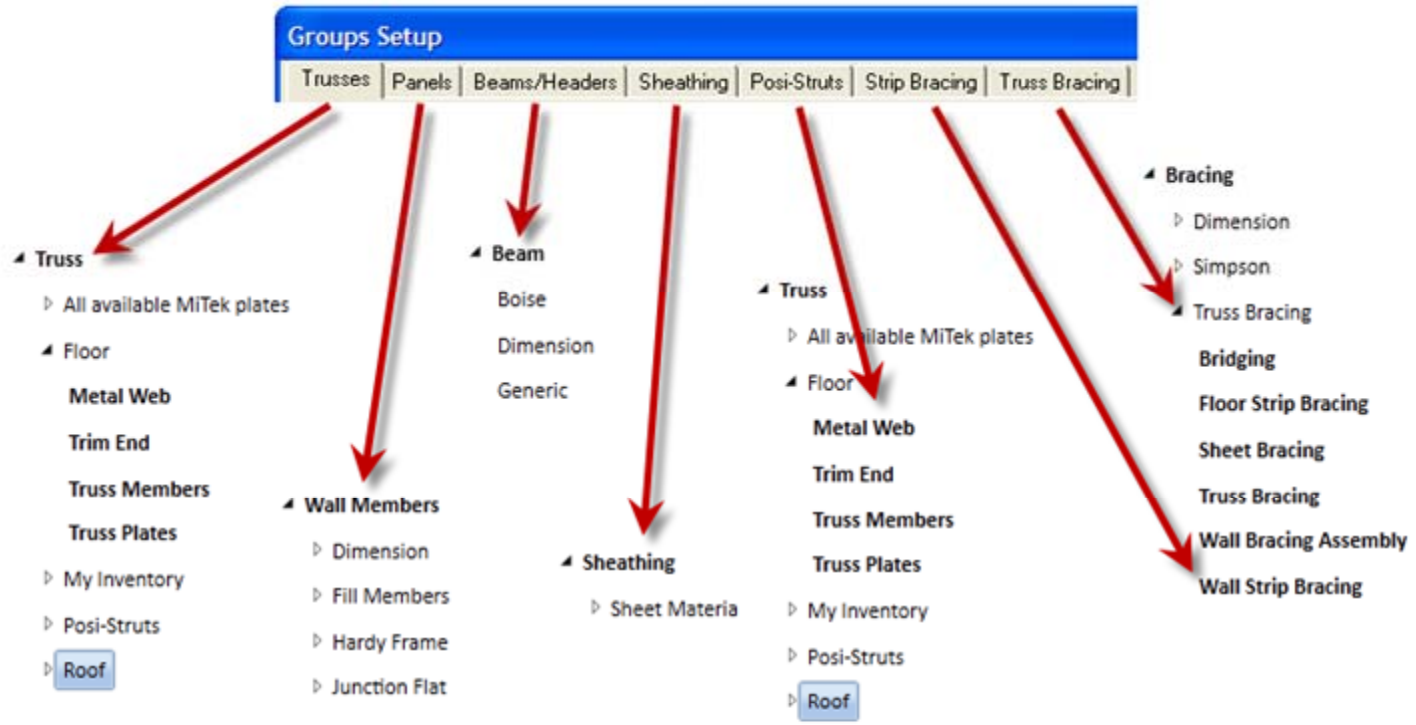
1. Master Inventory list / Available Material
2. Filters
3. Add and Remove buttons
4. Manual Sort buttons
5. Lumber list / Active Material list
6. Lumber Group Name / Material List Name
7. Lumber Group action buttons
8. Cost Group association
9. Sort button
10. Sort Preference options
11. Sort Preference manual sort buttons
12. Edit Sort Pref. button / Options

Materials

Group Settings Comparison (cont)

Each tab in the **Groups Setup** screen in Engineering matches an **Application Category** in SAPPHIRE™ Materials.

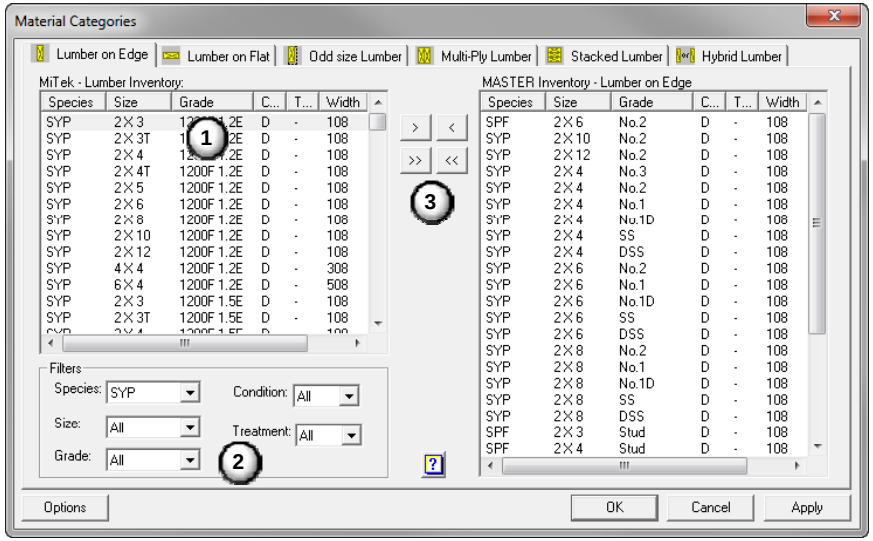
Figure 4: Groups Setup Tabs to Application Categories

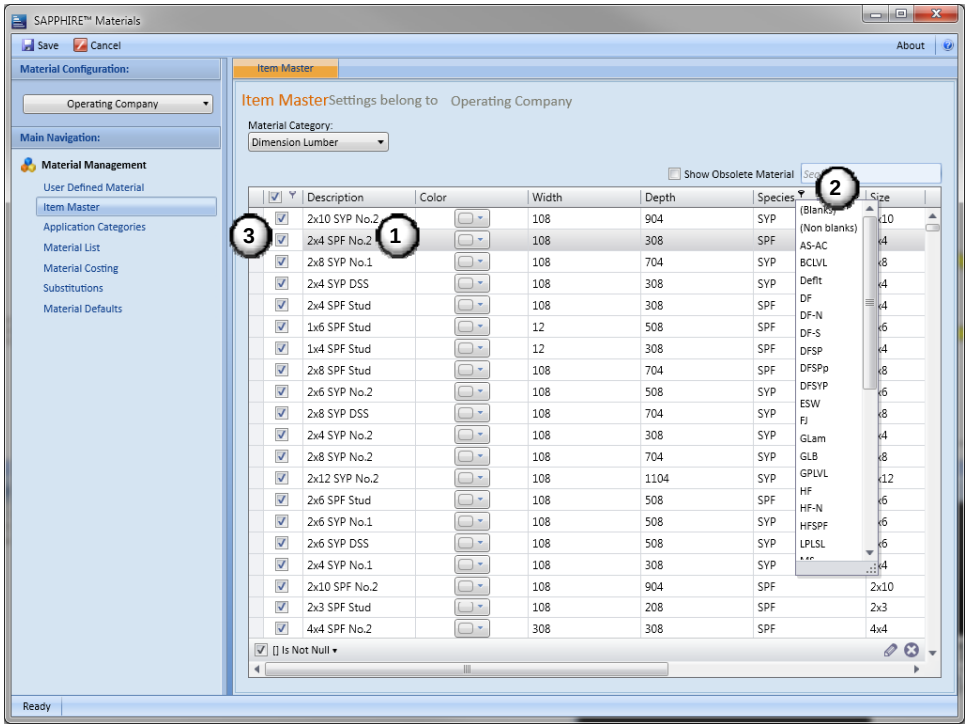


Materials

Material Categories Comparison

Figure 7: Item Master Screen in SAPPHIRE Materials





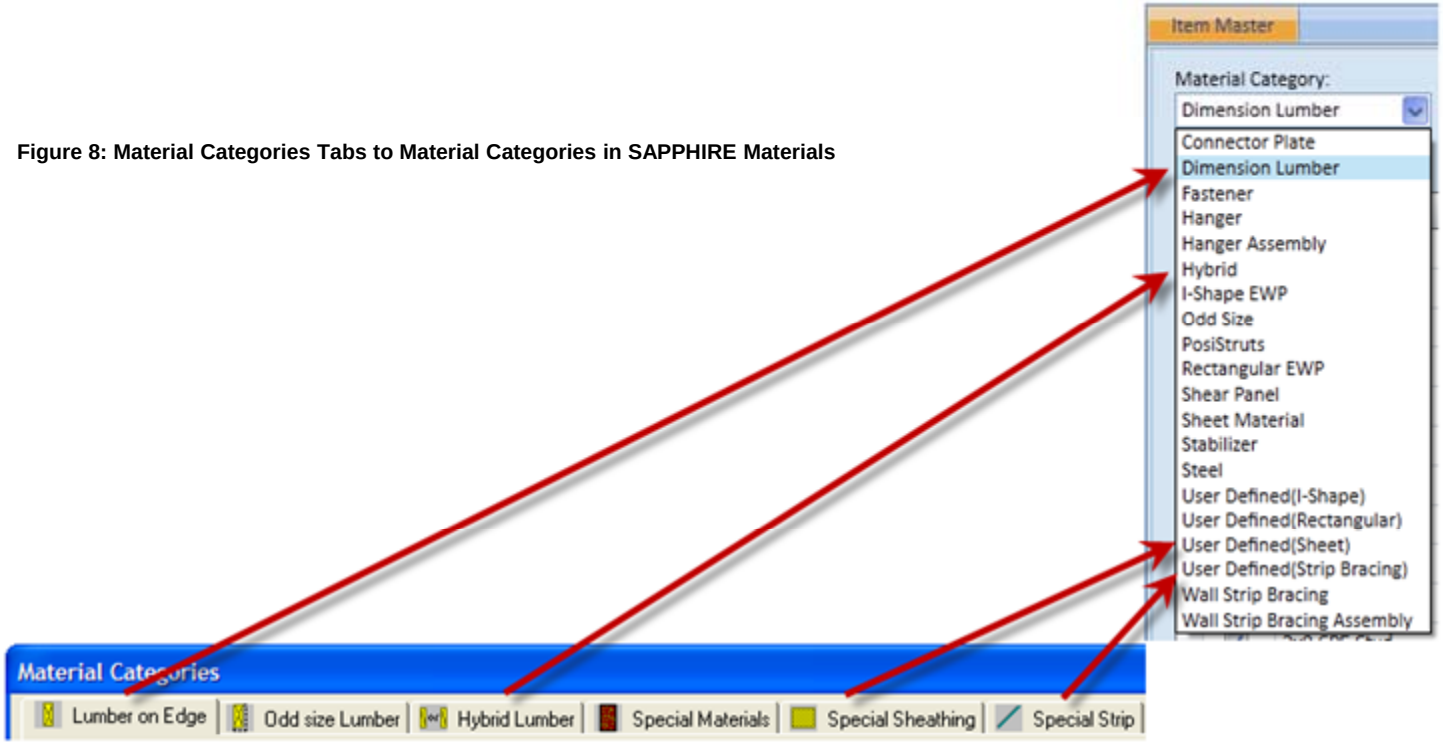
1. Master Inventory list
2. Filters
3. Add and Remove buttons

Materials

Material Categories Comparison (cont)

Each tab in the **Material Categories** screen in Engineering matches a **Material Category** in SAPPHIRE™ Materials.

Figure 8: Material Categories Tabs to Material Categories in SAPPHIRE Materials



Materials

Material Setups

The **Material Setups** screen in MiTek Engineering is equivalent to the **Material Defaults** screen in SAPPHIRE Materials.

Figure 9: Material Setups Screen in MiTek Engineering

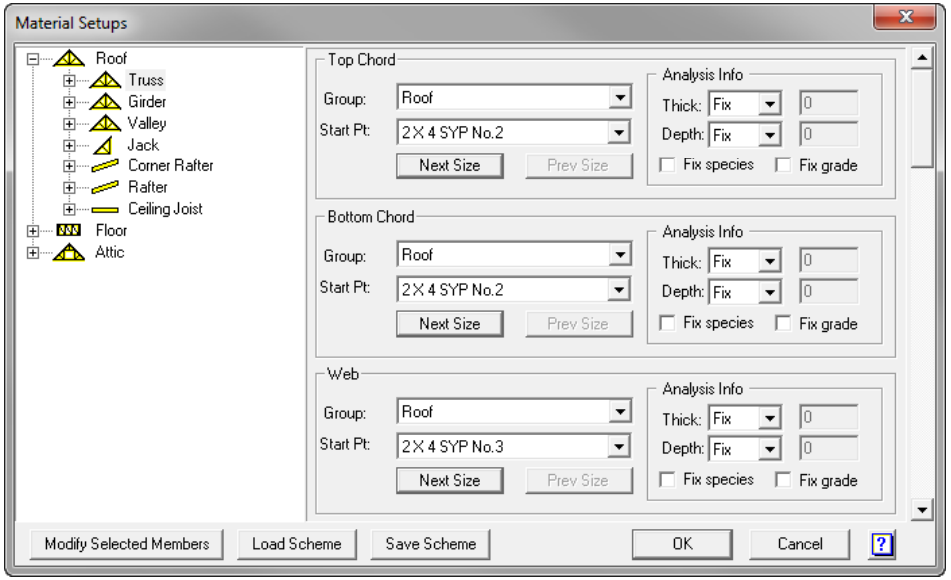
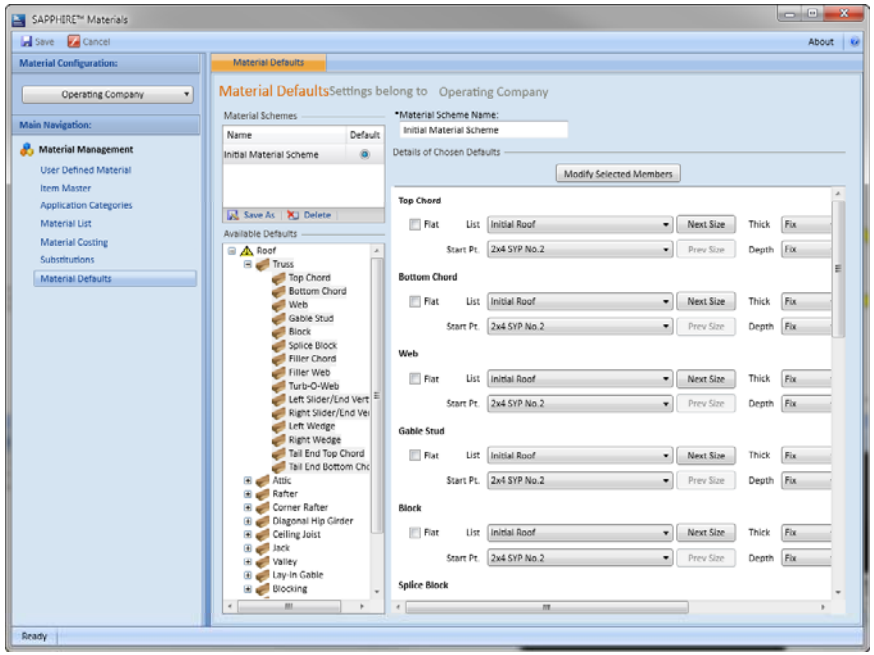


Figure 10: Material Defaults Screen in SAPPHIRE Materials

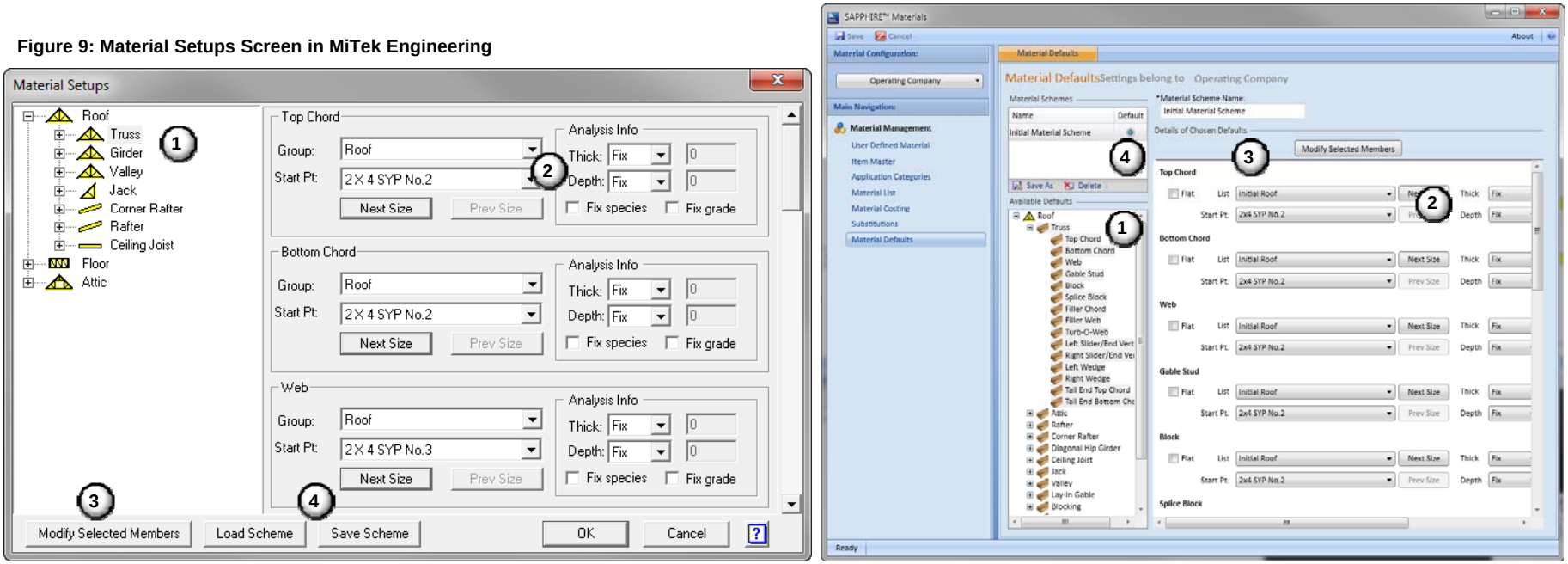


Materials

Material Setups Comparison

The old and new screens contain the same elements.

Figure 9: Material Setups Screen in MiTek Engineering



1. Member Types List
2. Member Type modifications
3. Modify Multiple Member Types
4. Member Type Schemes

Materials

Pricing Groups

The **Manufacturer Pricing Groups** screen in MiTek Engineering is equivalent to the **Material Costing** screen in SAPPHIRE™ Materials.

Figure 12: Manufacturer Pricing Groups Screen in MiTek Engineering

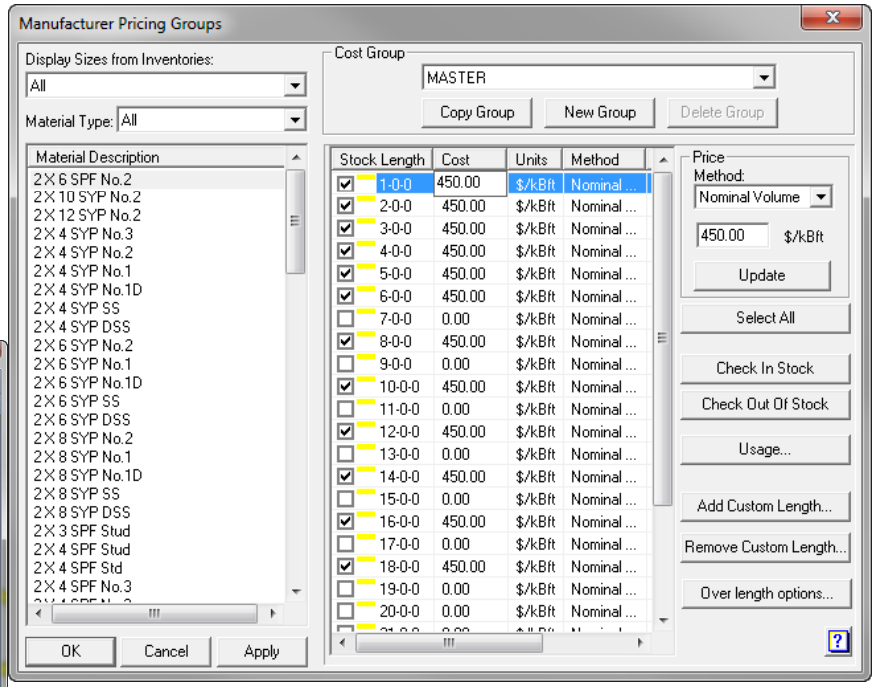
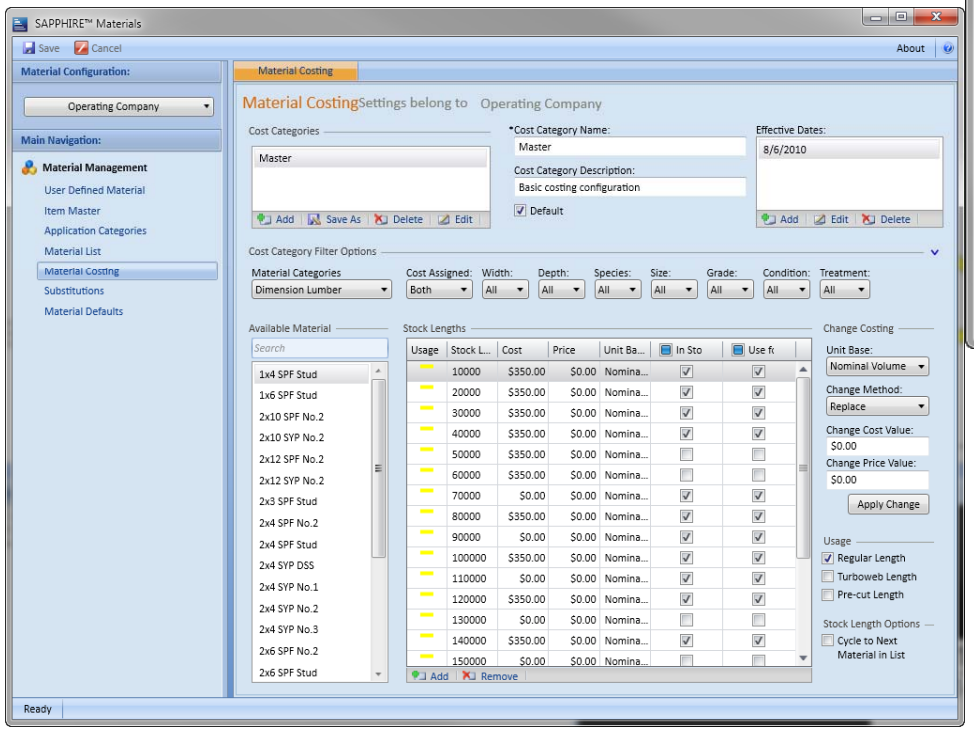


Figure 13: Material Costing Screen in MiTek Engineering

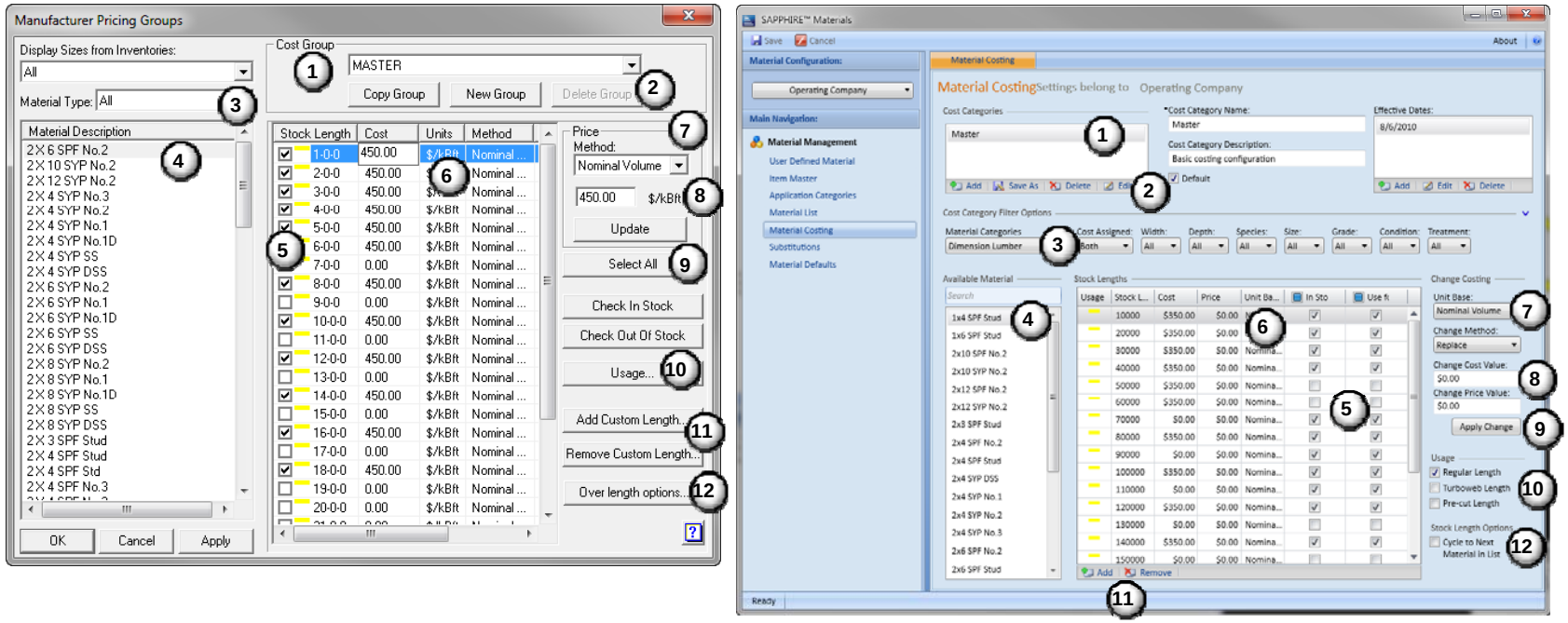


Materials

Pricing Groups Comparison

The old and new screens contain the same elements.

Figure 14: Screen Comparison, Manufacturer Pricing Groups to Material Costing



1. Cost Group list
2. Cost Group buttons
3. Material Type dropdown
4. Filtered Material list
5. In Stock checkbox
6. Stock Length list
7. Price Method dropdown
8. Cost change field
9. Update / Apply Change button
10. Usage button
11. Custom Length buttons
12. Over length options / Cycle to Next Material

Materials

Substitutions

The Substitution Rules screen in MiTek Engineering is equivalent to the Substitutions screen in SAPPHIRE™ Materials.

Figure 15: Substitution Rules Screen in MiTek Engineering

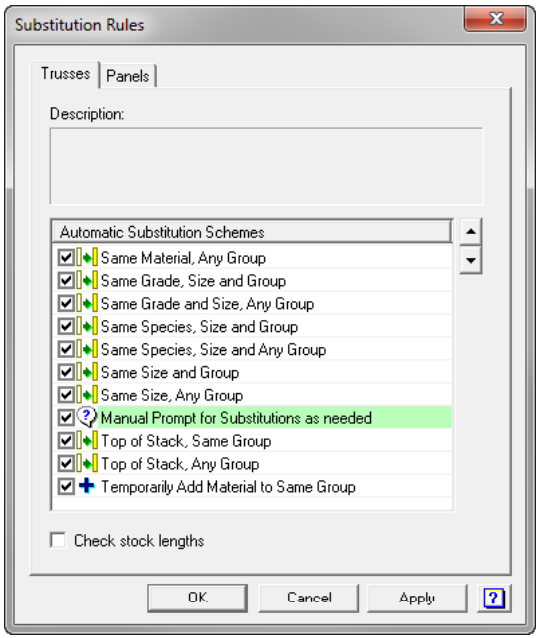
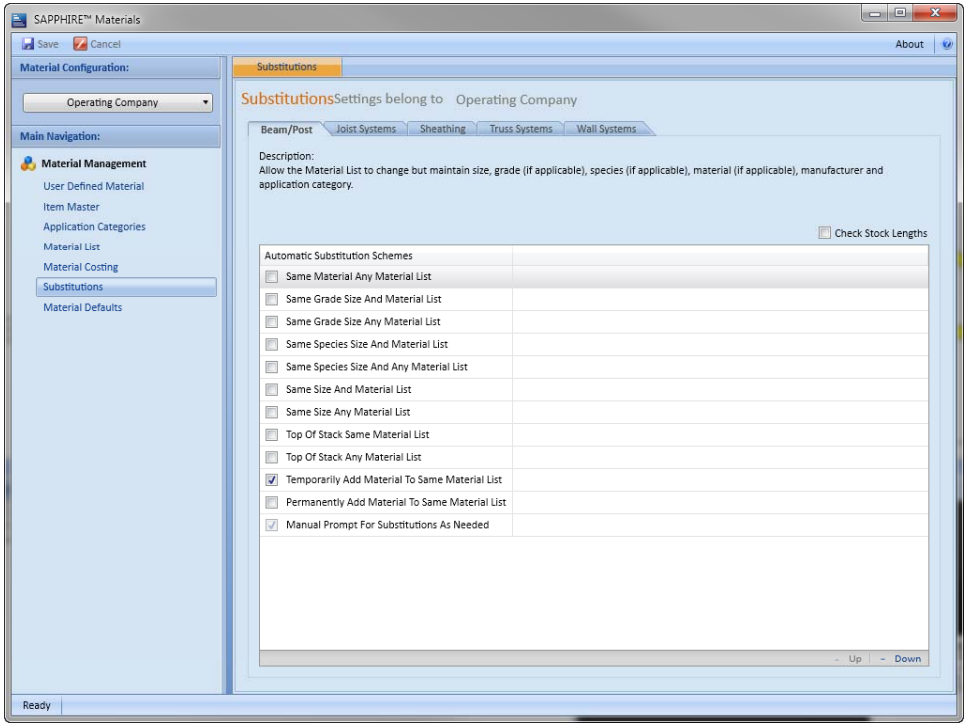


Figure 16: Substitutions Screen in SAPPHIRE Materials

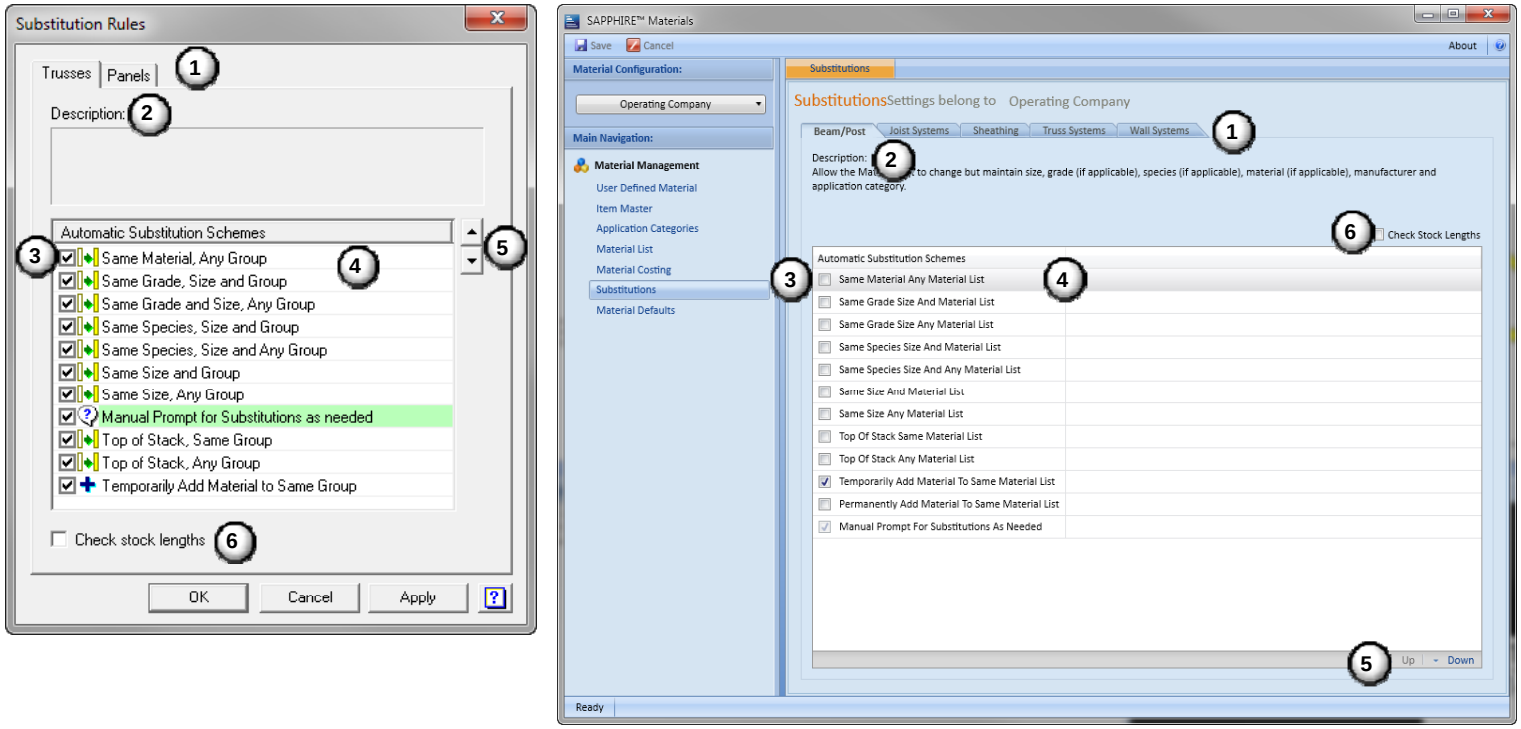


Materials

Substitutions Comparison

The old and new screens contain the same elements.

Figure 17: Screen Comparison, Substitution Rules to Substitutions



1. Application Tabs
2. Substitution Rule Description
3. Substitution checkbox
4. Substitution Rule list
5. Sort buttons
6. Check Stock Lengths checkbox

Materials

Color Schemes

The **Color Schemes** screen in MiTek Engineering is equivalent to a function of the **Item Master** screen in SAPPHIRE™ Materials.

To access the **Color Schemes** screen in MiTek Engineering, select **Setup>Manufacturer>Lumber** and click the **Color Scheme** button on the **Material Setups** screen.

Figure 18: Color Scheme Screen in MiTek Engineering

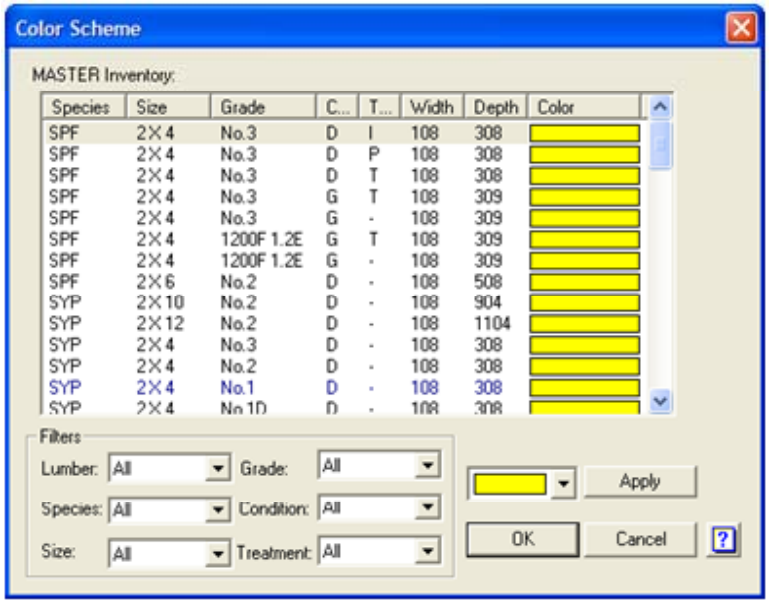
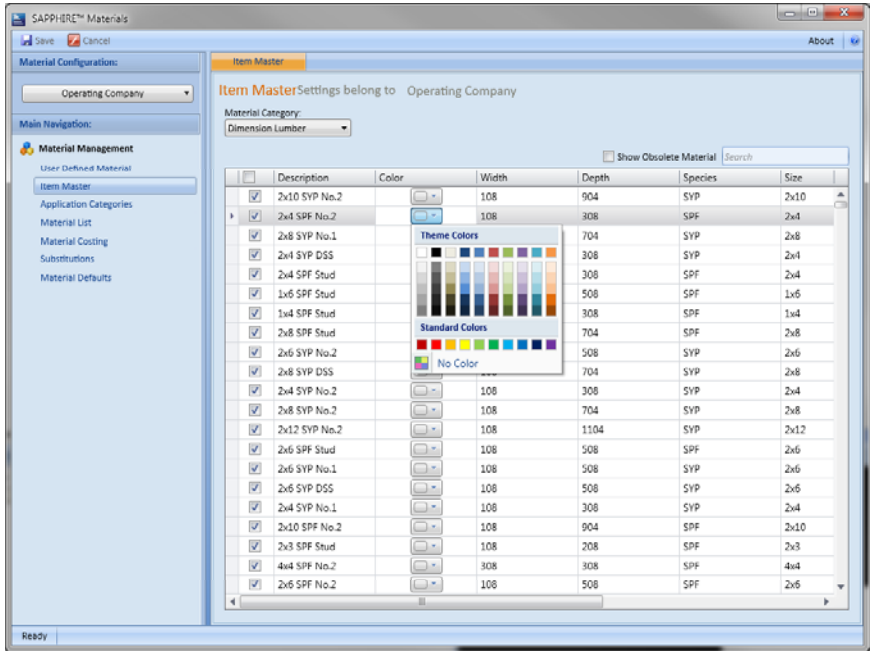

Color Scheme
MASTER Inventory:
Species Size Grade C... T... Width Depth Color
SPF 2X4 No.3 D I 108 308
SPF 2X4 No.3 D P 108 308
SPF 2X4 No.3 D T 108 308
SPF 2X4 No.3 G T 108 309
SPF 2X4 No.3 G - 108 309
SPF 2X4 1200F 1.2E G T 108 309
SPF 2X4 1200F 1.2E G - 108 309
SPF 2X6 No.2 D - 108 508
SYP 2X10 No.2 D - 108 904
SYP 2X12 No.2 D - 108 1104
SYP 2X4 No.3 D - 108 308
SYP 2X4 No.2 D - 108 308
SYP 2X4 No.1 D - 108 308
Filters
Lumber: All
Grade: All
Species: All
Condition: All
Size: All
Treatment: All
Apply
OK
Cancel

Figure 19: Color Scheme Function on Item Master Screen in SAPPHIRE Materials



Materials

Plates

The **Manufacturer Plates** screen in MiTek Engineering is equivalent to a function of the **Material Costing** screen in SAPPHIRE™ Materials.

To access the **Manufacturer Plates** screen in MiTek Engineering go to **Setup>Manufacturer>Materials>Plates.**

Figure 20: Manufacturer Plates Screen in MiTek Engineering

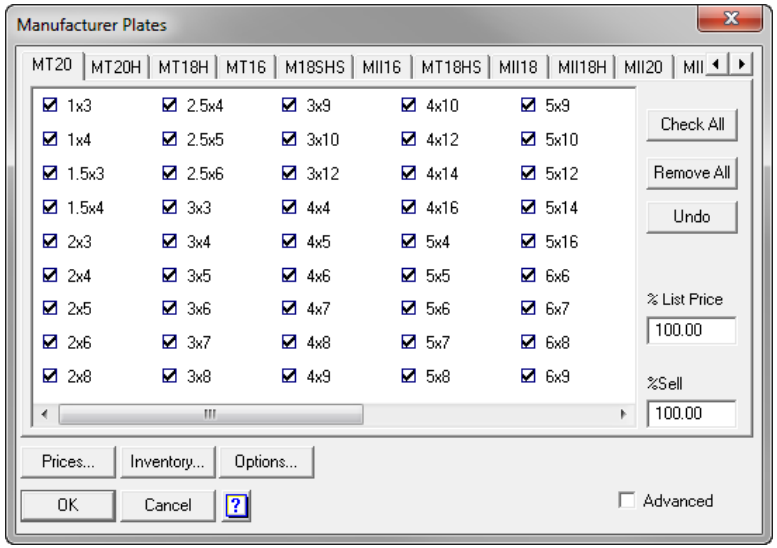
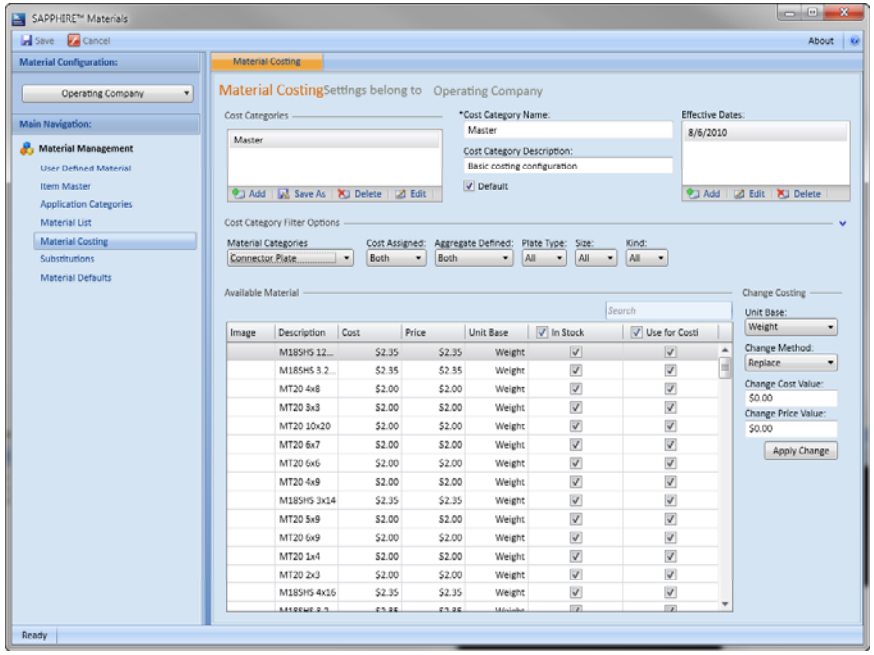


Figure 21: Material Costing Screen in SAPPHIRE Materials

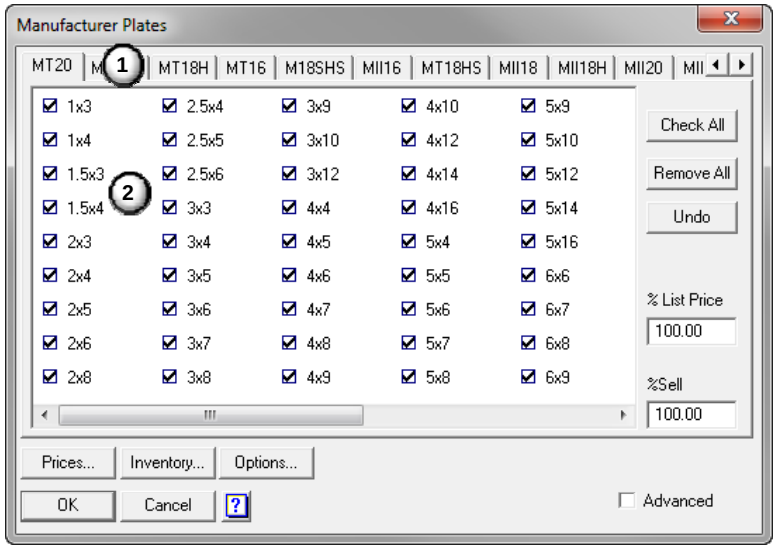


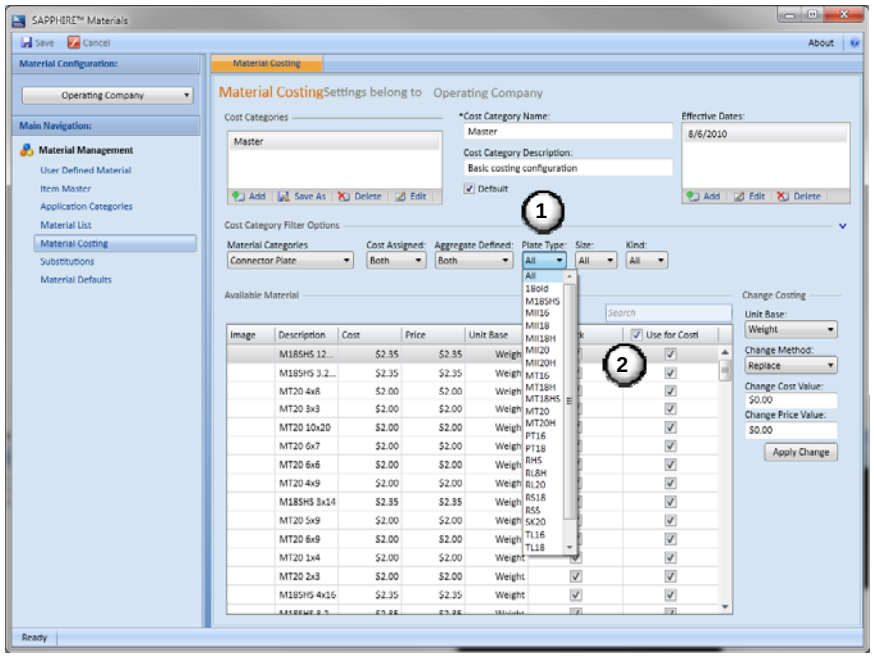
Materials

Plates Comparison

The old and new screens contain similar elements.

Figure 22: Screen Comparison, Manufacturer Plates to Material Costing





1. Plate Type selection
2. Stocked and Unstocked checkboxes

Materials

Plates Prices

The **Plate Prices** screen in MiTek Engineering is equivalent to the **Material Costing** screen in SAPPHIRE™ Materials.

To access the **Plate Prices** screen in MiTek Engineering, go to **Setup>Manufacturer>Materials>Plates** and click the **Pricing** button.

Figure 24: Material Costing Screen in SAPPHIRE Materials

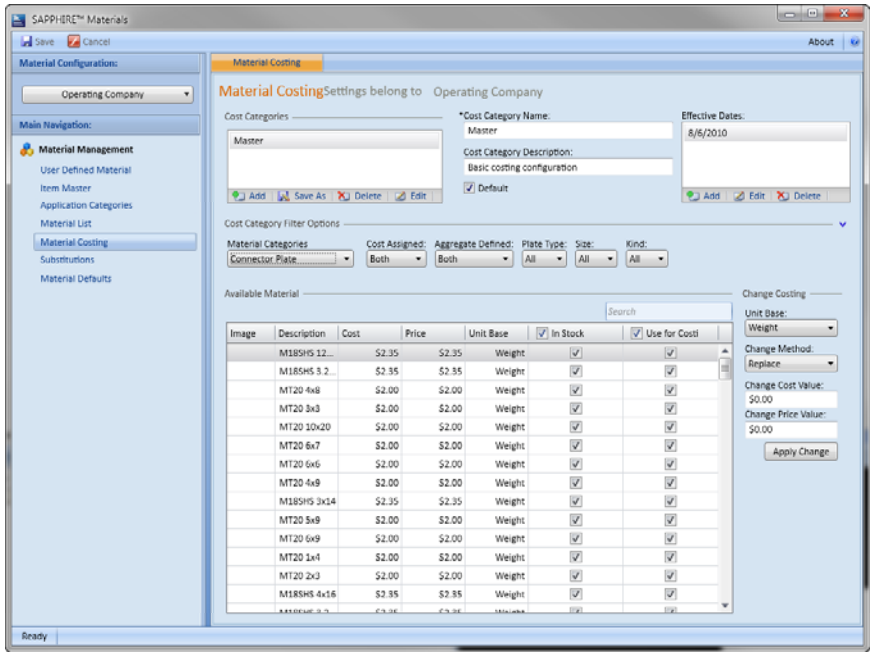
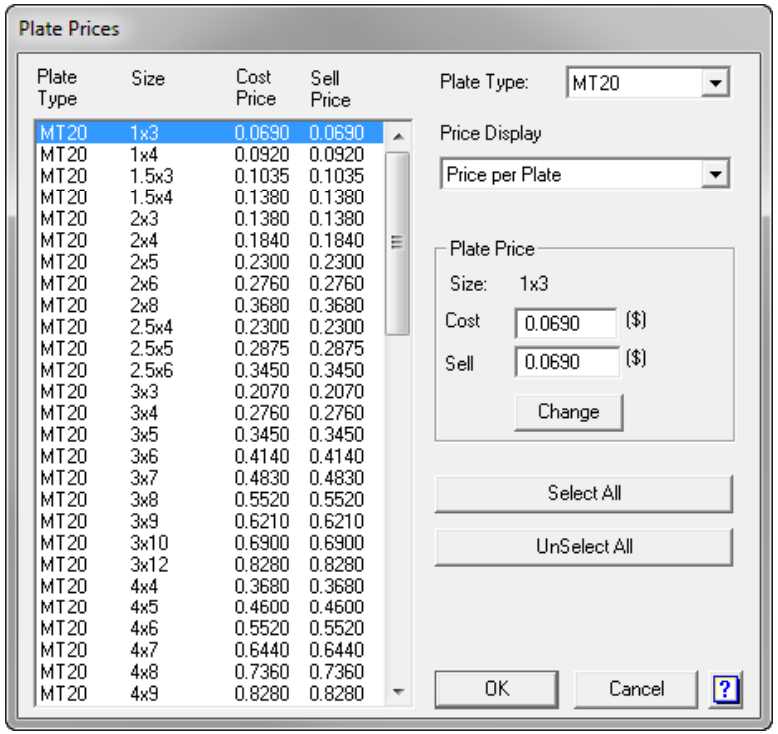


Figure 23: Plate Prices Screen in MiTek Engineering

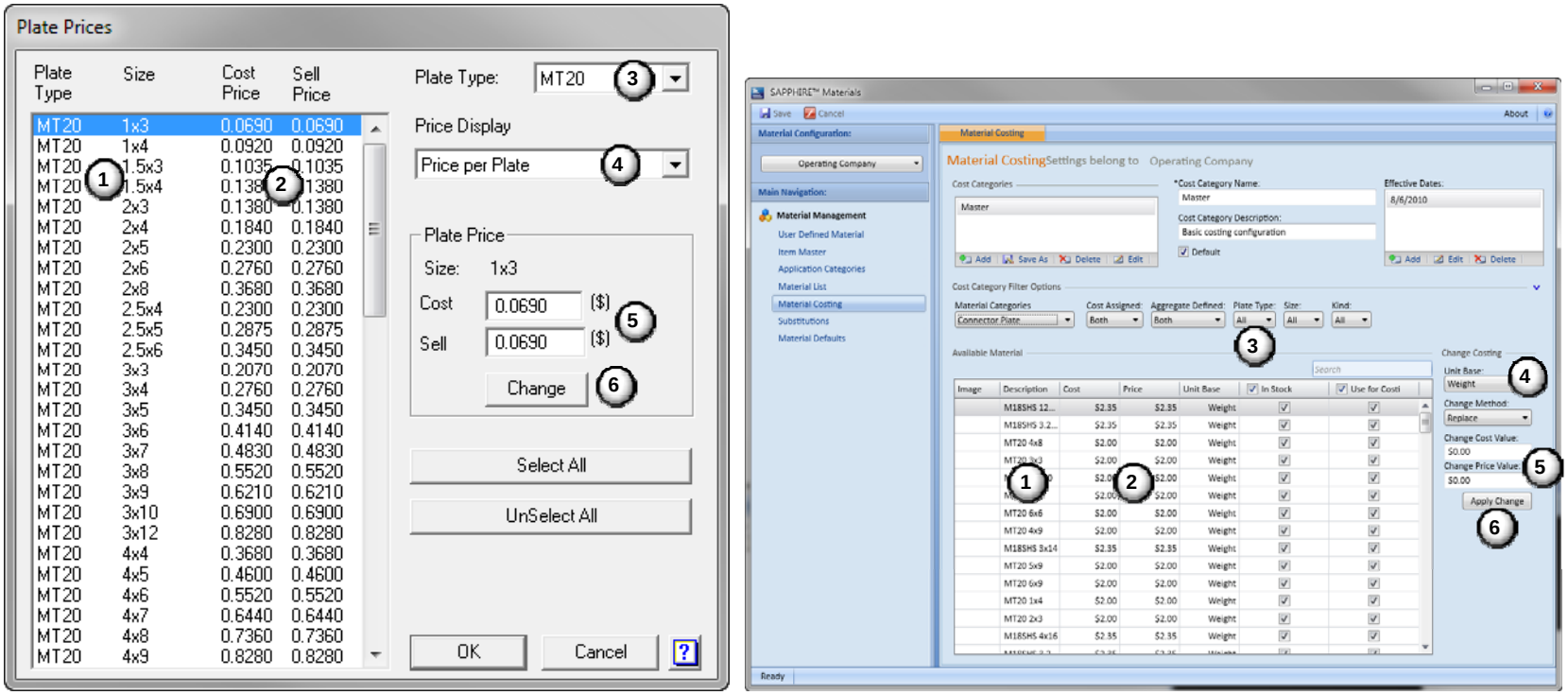


Materials

Plates Prices Comparison

The old and new screens contain similar elements.

Figure 25: Screen Comparison, Manufacturer Plates to Material Costing



1. Plate Type and Size
2. Cost and Sell display fields
3. Plate Type dropdown
4. Price or Units display
5. Cost and Sell change fields
6. Apply Change button

Materials

Plating Inventory

The **Plating Inventory** screen in MiTek Engineering is equivalent to functions of both the **Item Master** screen and the **Material List** screen in SAPPHIRE™ Materials.

To access the **Manufacturer Plates** screen in MiTek Engineering, go to **Setup>Manufacturer>Materials>Plates** and click the **Inventory** button.

Figure 26: Plating Inventory Screen in MiTek Engineering

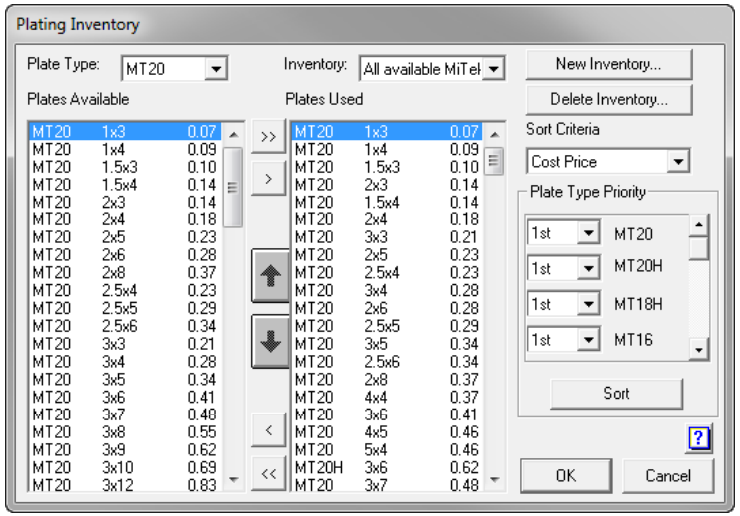
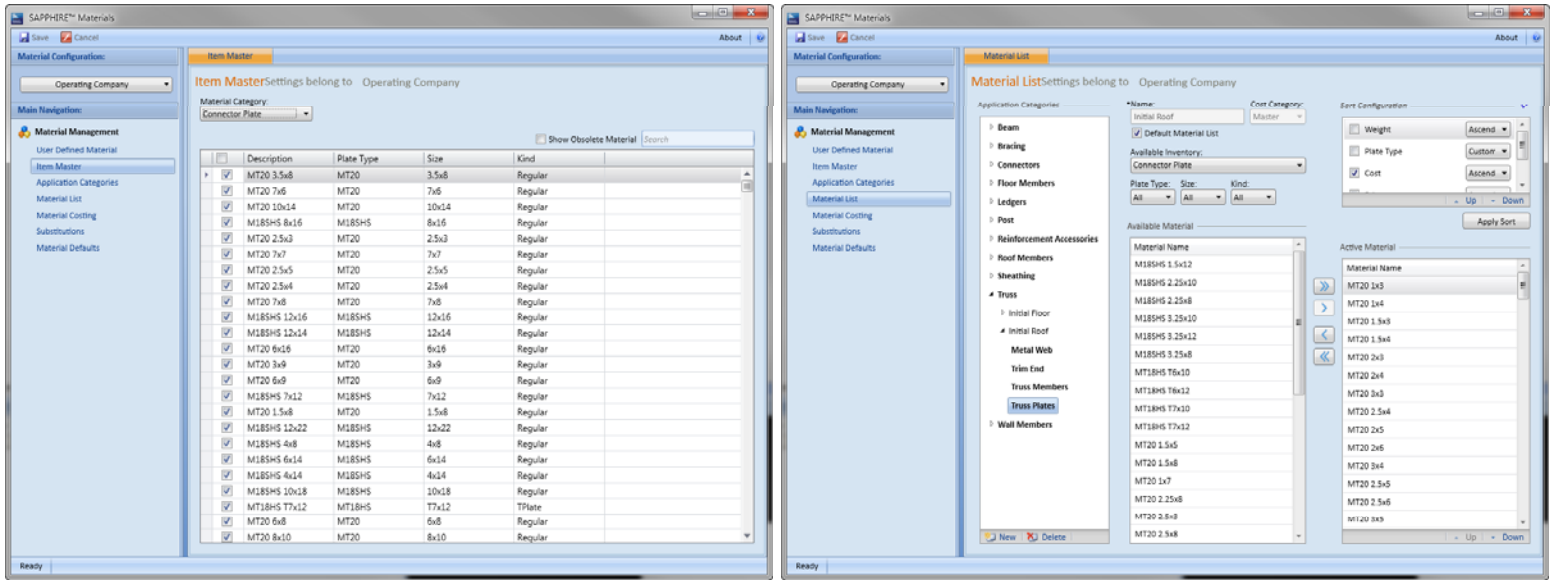


Figure 27: Item Master Screen and Material List Screen in SAPPHIRE Materials



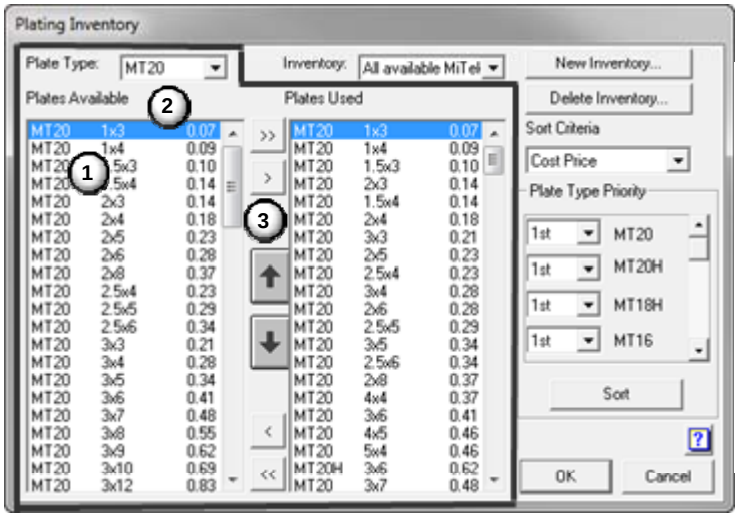
Materials

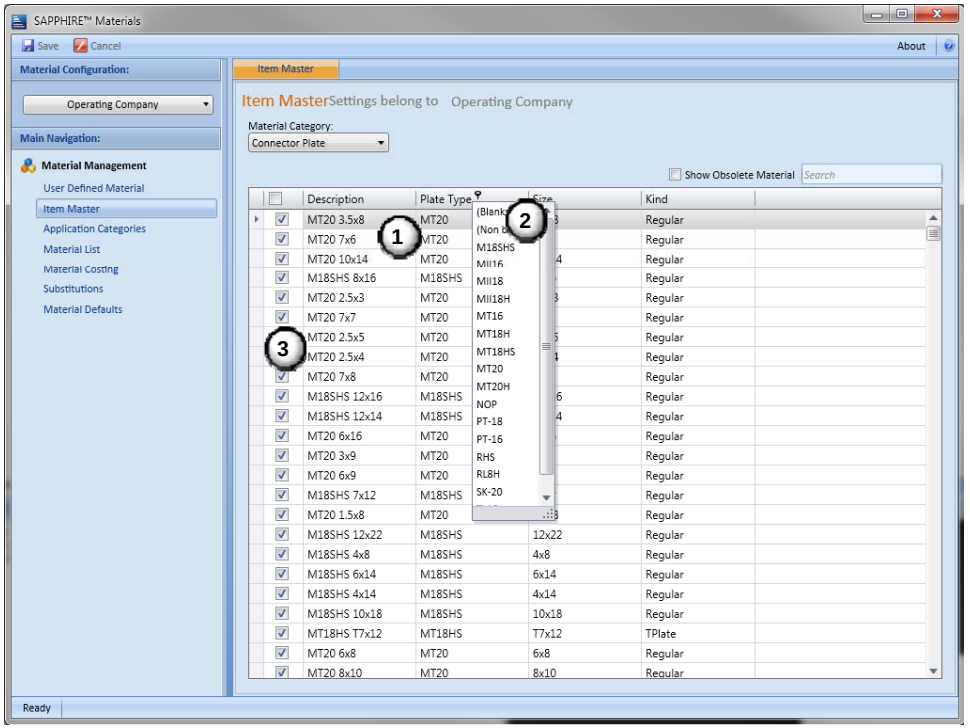
Plating Inventory Comparison

The old and new screens contain similar elements.

The black outlined section in the **Plating Inventory** screen is equivalent to the **Item Master** screen.

Figure 28: Screen Comparison, Plating Inventory to Item Master





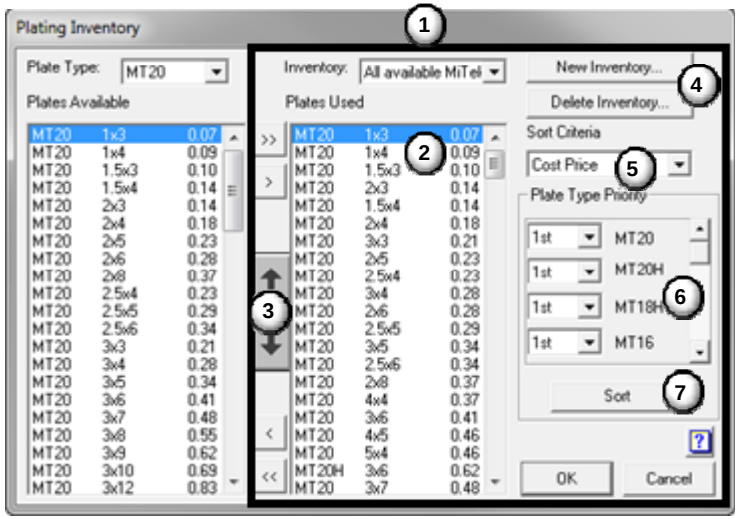
1. List of all Plates
2. Plate Type filter dropdown
3. Add/Remove Plates to “Plates Used” list

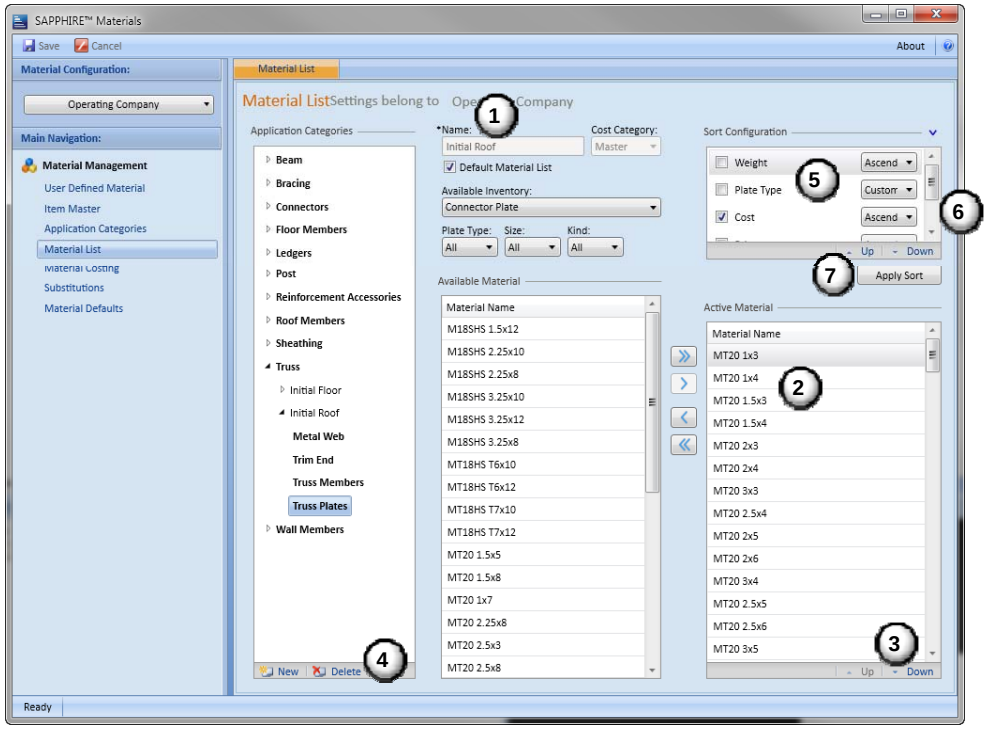
Materials

Plating Inventory Comparison (cont)

The black outlined section in the **Plating Inventory** screen is equivalent to the **Material List** screen.

Figure 29: Screen Comparison, Plating Inventory to Material List





1. Plate List name
2. Plate Used list
3. Manual Sort buttons
4. Inventory/List Action buttons
5. Sort Criteria
6. Plate Type Sort Order
7. Apply Sort button

Materials

Hanger Inventory

The **Manufacturer Hanger Inventory** screen in MiTek Engineering is equivalent to functions of the **Material Costing** screen in SAPPHIRE™ Materials.

To access the **Manufacturer Hanger Inventory** screen in MiTek Engineering go to **Setup>Manufacturer>Materials>Hangers.**

Figure 32: Manufacturer Hanger Inventory Screen in MiTek Engineering

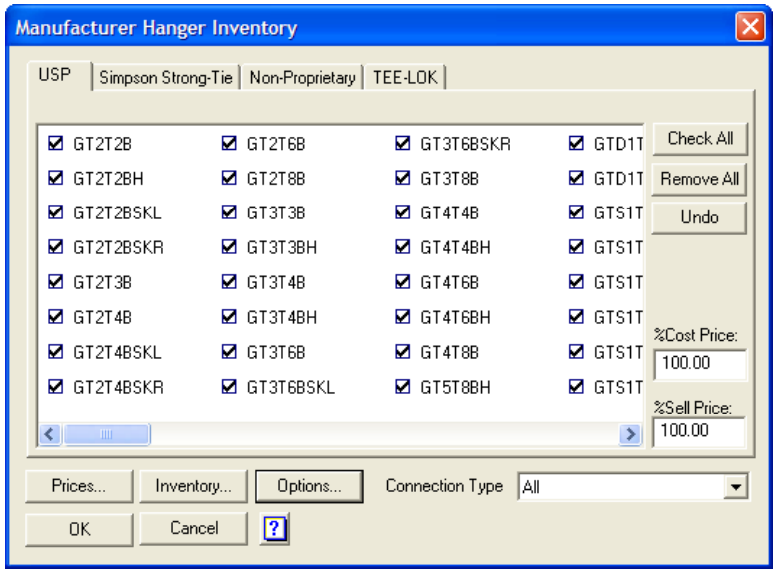
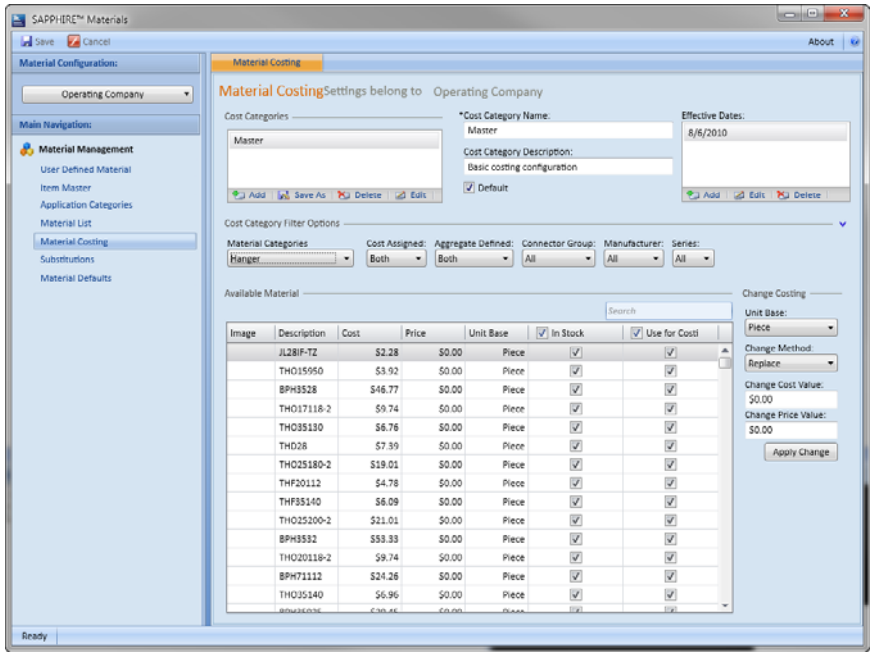


Figure 33: Material Costing Screen in SAPPHIRE Materials

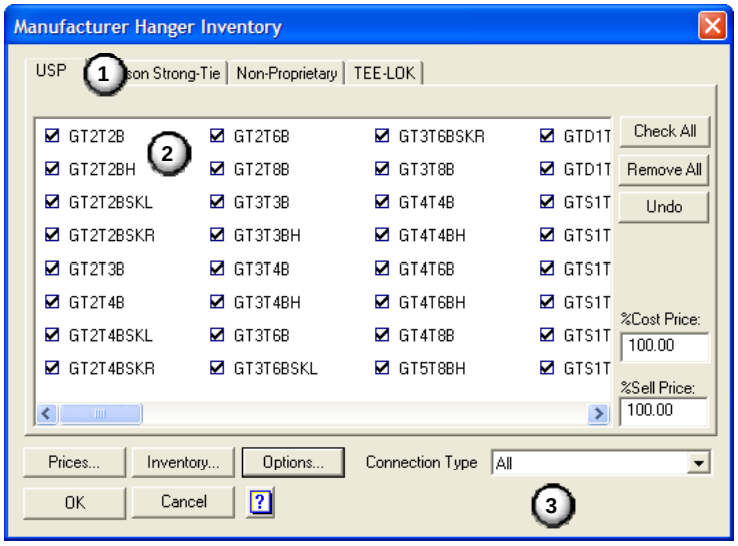


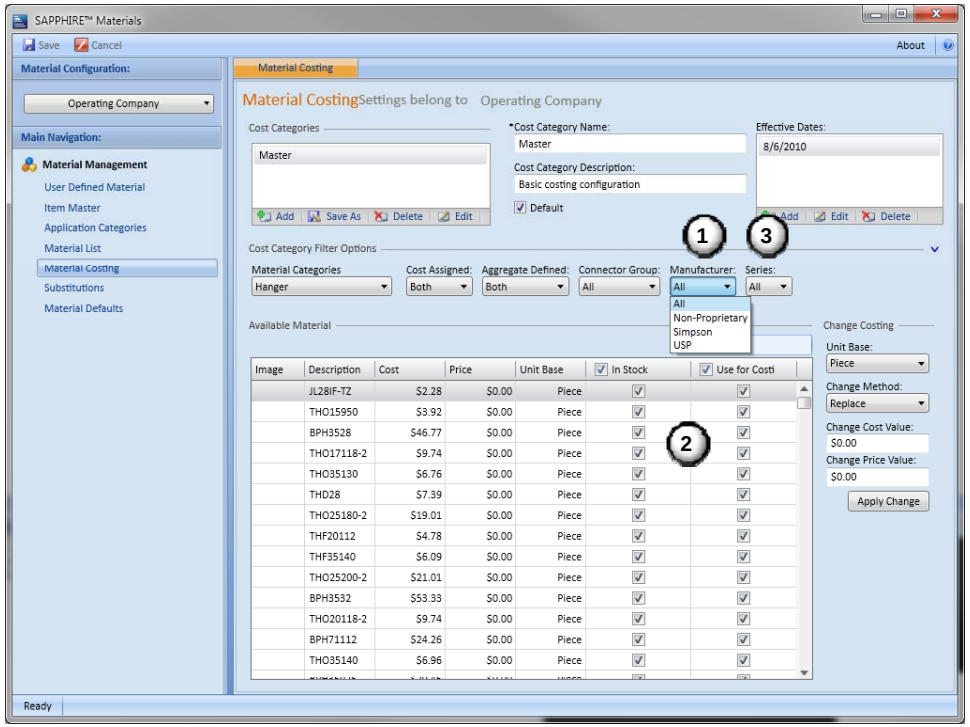
Materials

Hanger Inventory Comparison

The black outlined section in the **Plating Inventory** screen is equivalent to the **Item Master** screen.

Figure 34: Screen Comparison, Manufacturer Hanger Inventory to Material Costing





1. Hanger Manufacture selection
2. Stocked and Unstocked checkboxes
3. Connection Type Filter

Materials

Hanger Prices

The **Hanger Prices** screen is equivalent to functions of the **Material Costing** screen in SAPPHIRE™ Materials.

To access the **Hanger Prices** screen in MiTek Engineering, go to **Setup>Manufacturer>Materials>Hangers** and click the **Prices** button.

Figure 36: Material Costing Screen in SAPPHIRE Materials

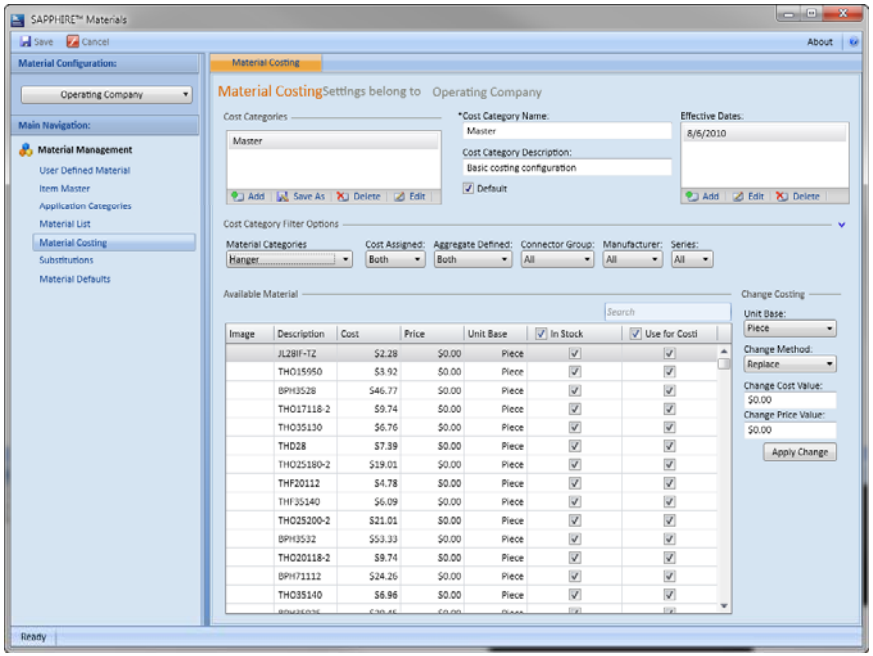
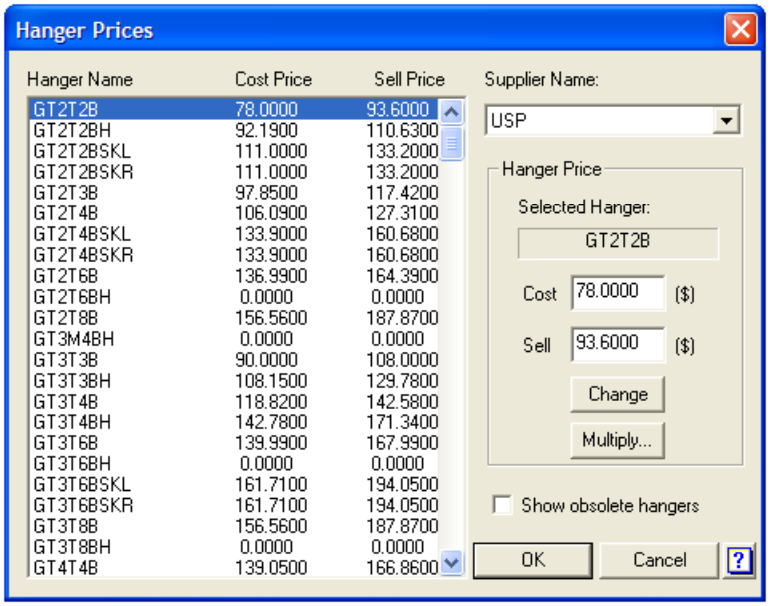


Figure 35: Hanger Prices Screen in MiTek Engineering

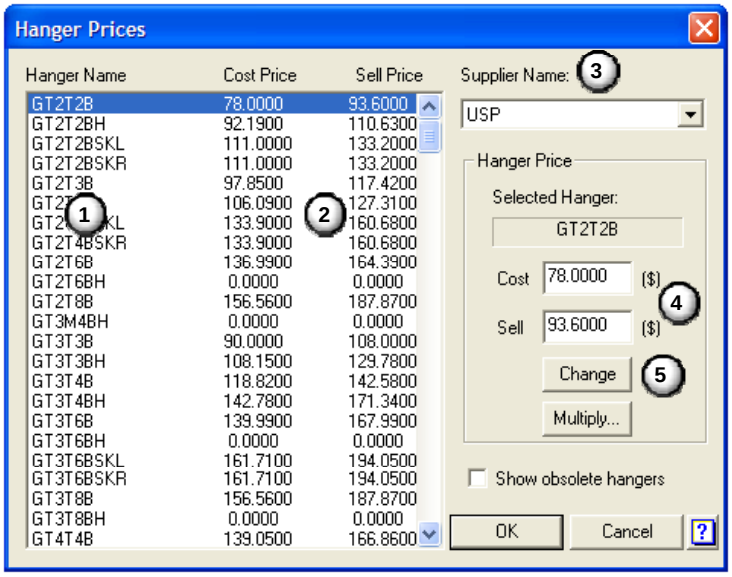


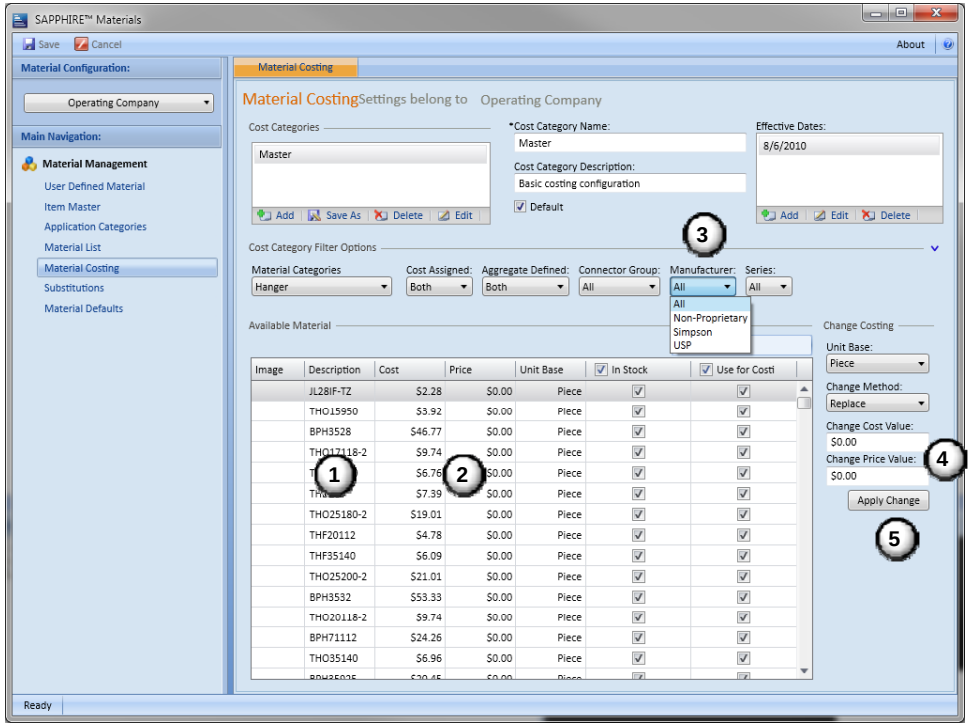
Materials

Hanger Prices Comparison

The black outlined section in the **Plating Inventory** screen is equivalent to the **Item Master** screen.

Figure 37: Screen Comparison, Hanger Prices to Material Costing





1. Hanger List
2. Cost and Sell display fields
3. Manufacturer dropdown
4. Cost and Sell change fields
5. Apply Change button

Materials

Hanger Inventory

The **Hanger Inventory** screen is equivalent to functions of the **Item Master** screen and the **Material List** screen in SAPPHIRE™ Materials.

To access the **Hanger Inventory** screen in MiTek Engineering, go to **Setup>Manufacturer>Materials>Hangers** and click the **Inventory** button.

Figure 38: Hanger Inventory Screen in MiTek Engineering

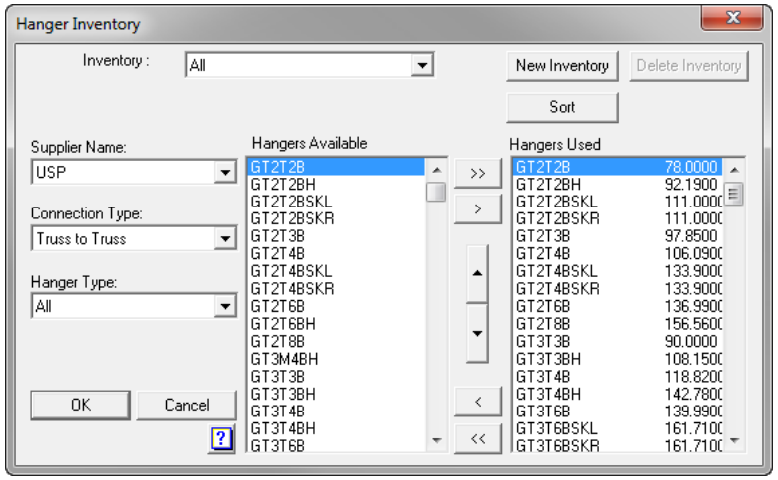
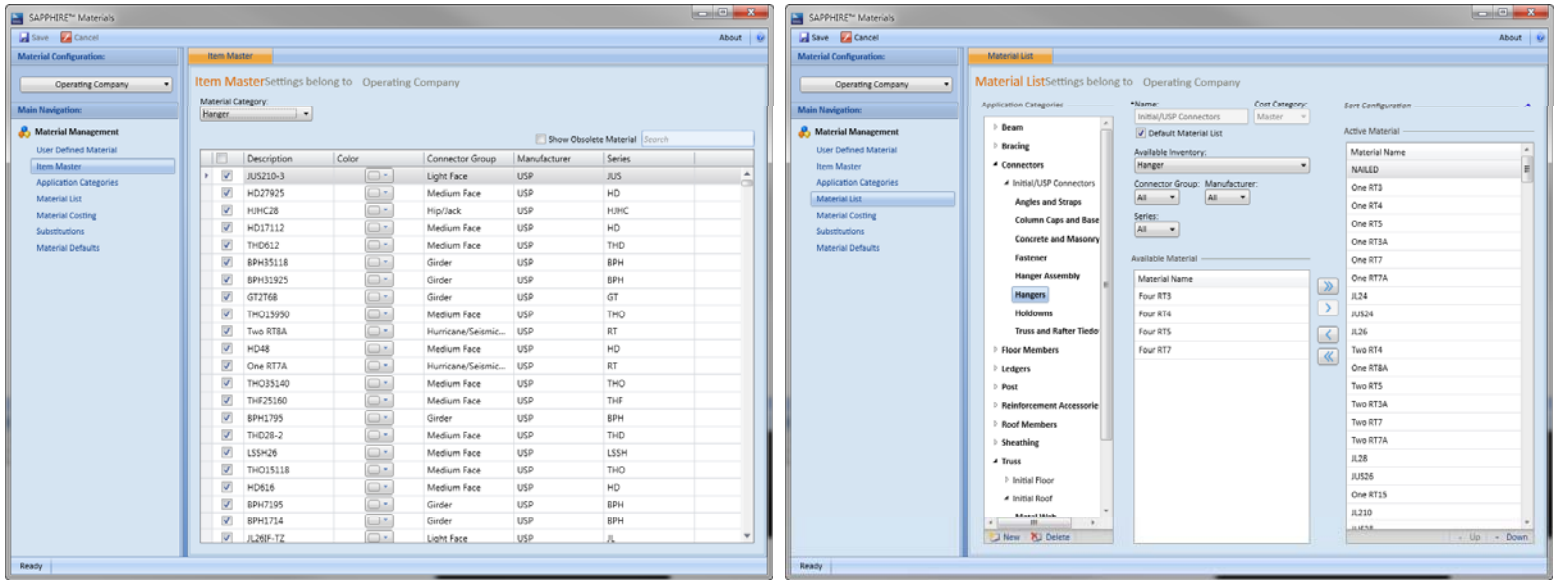


Figure 39: Item Master Screen and Material List Screen in SAPPHIRE Materials

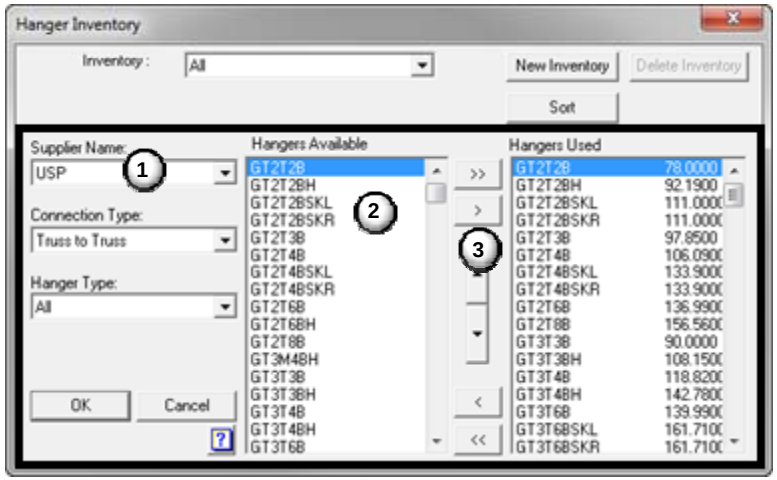


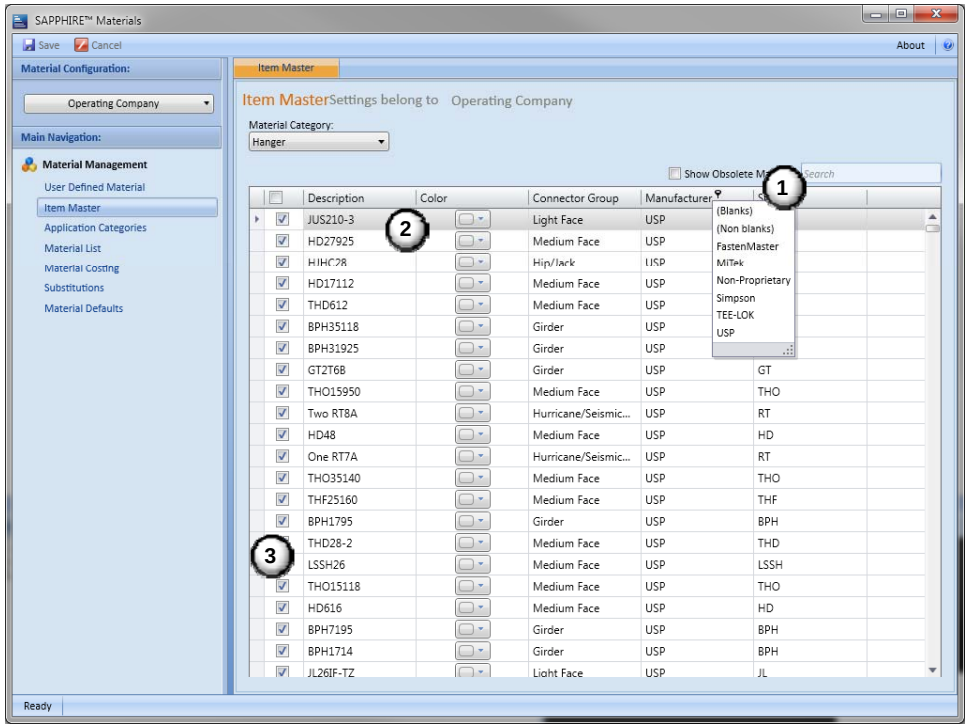
Materials

Hanger Inventory Comparison

The black outlined section in the **Hanger Inventory** screen is equivalent to the numbered functions on the **Item Master** screen.

Figure 40: Screen Comparison, Hanger Inventory to Item Master





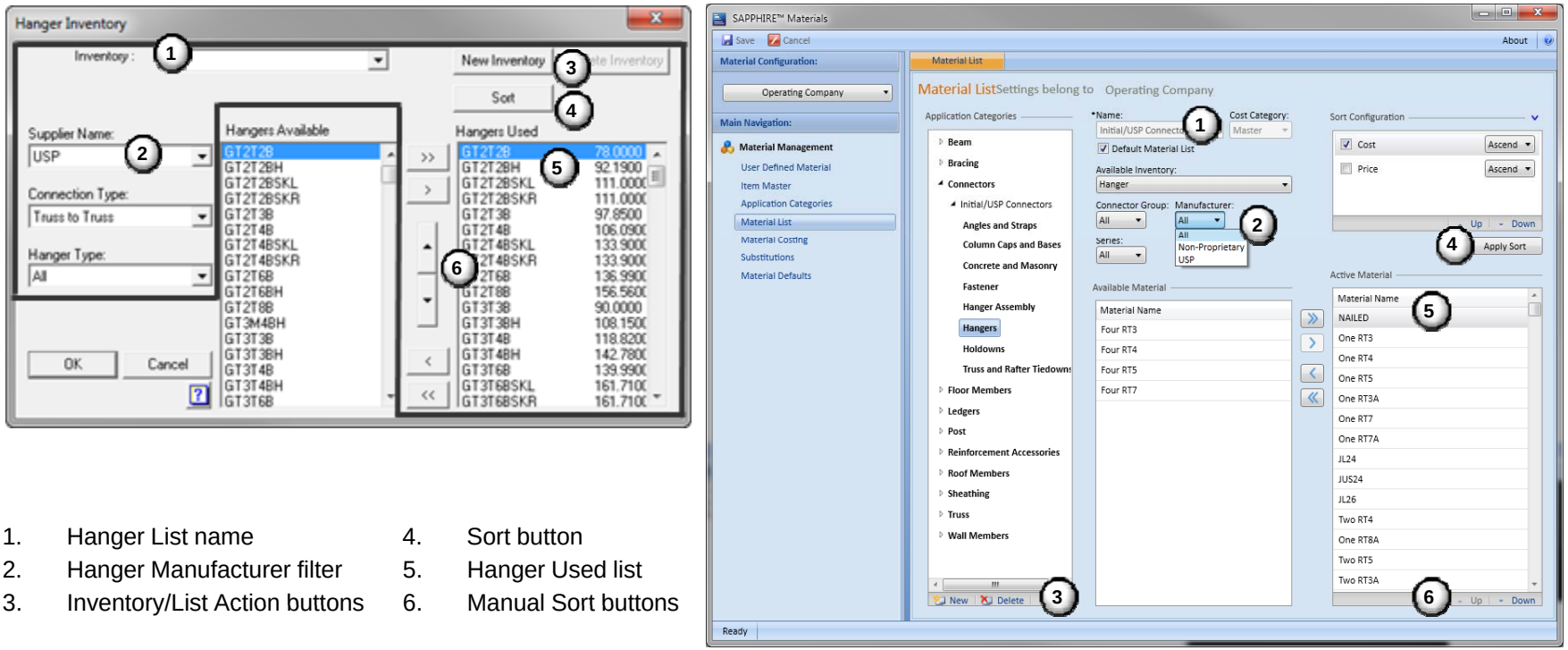
1. Hanger Manufacture filter
2. Available Hangers list
3. Add/Remove Hangers to “Used” list

Materials

Hanger Inventory Comparison (cont)

The black outlined section in the **Plating Inventory** screen is equivalent to the **Item Master** screen.

Figure 41: Screen Comparison, Hanger Inventory to Material List



1. Hanger List name
2. Hanger Manufacturer filter
3. Inventory/List Action buttons
4. Sort button
5. Hanger Used list
6. Manual Sort buttons

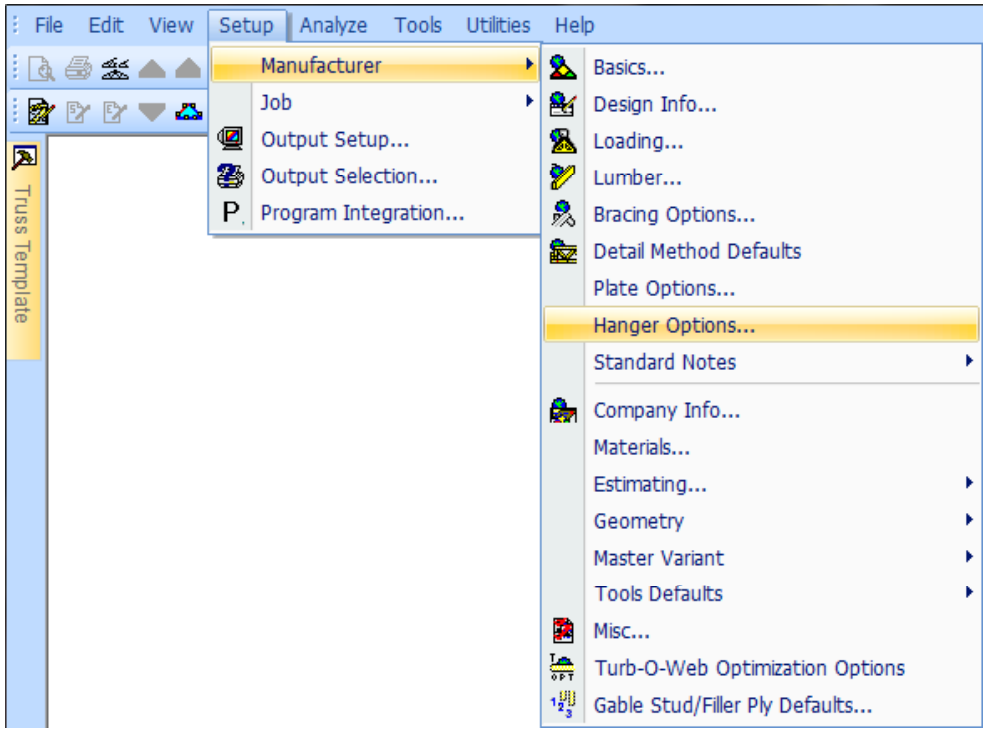
Materials

Hanger Options

The **Hanger Options** screen in MiTek Engineering has been moved.

The previous way to access **Hanger Options** screen in MiTek Engineering was to go to **Setup > Manufacturer > Materials > Hangers.**

You now get to this screen by going to **Setup > Manufacturer > Hanger Options.**



Materials

Hanger Color

The **Hanger Colors** screen in MiTek Engineering is equivalent to a function of the **Item Master** screen in SAPPHIRE™ Materials.

To access the **Color Schemes** screen in MiTek Engineering, select **Setup > Manufacturer > Hanger Options** and select the **Hanger Color** tab

Figure 42: Hanger Options Screen in MiTek Engineering

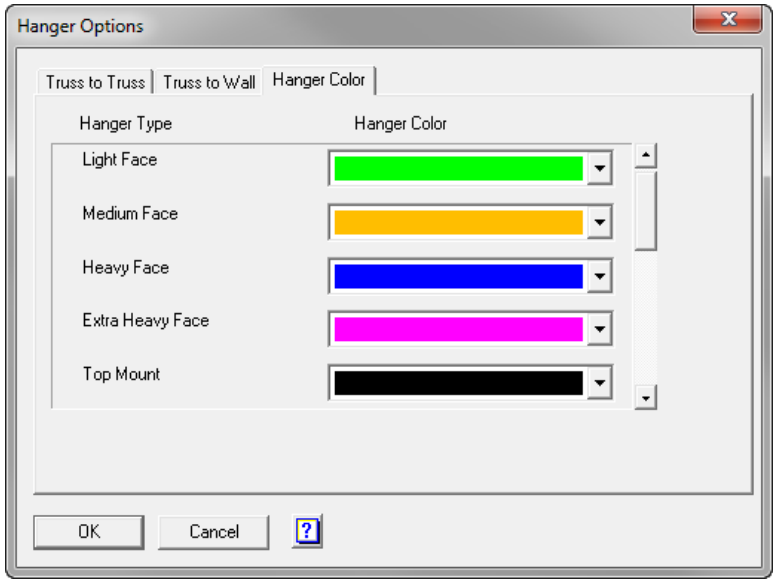
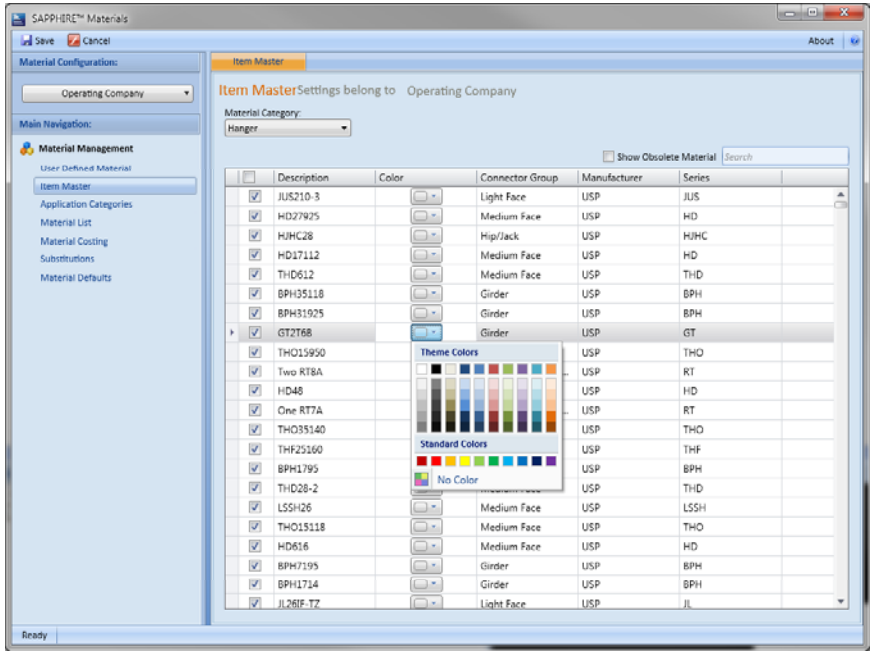


Figure 43: Scheme Function on Item Master Screen in SAPPHIRE Materials



Estimating – Roof/Floor

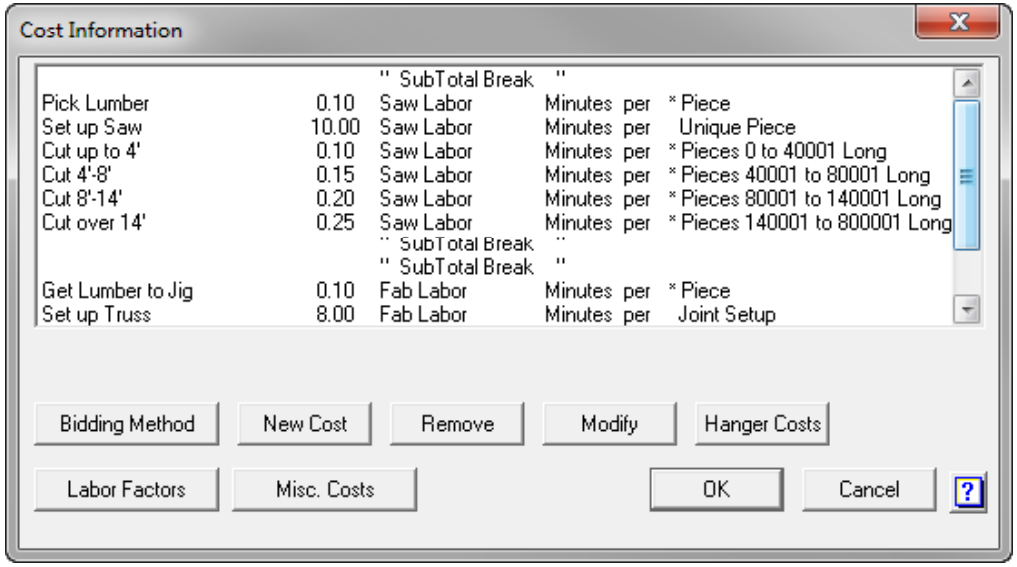
Information

The upper section of the estimating dialog window displays the current pricing scheme.

Starting, and ending, each section with **"SubTotal Break"** will report separate pricing information for each section and then give a total.

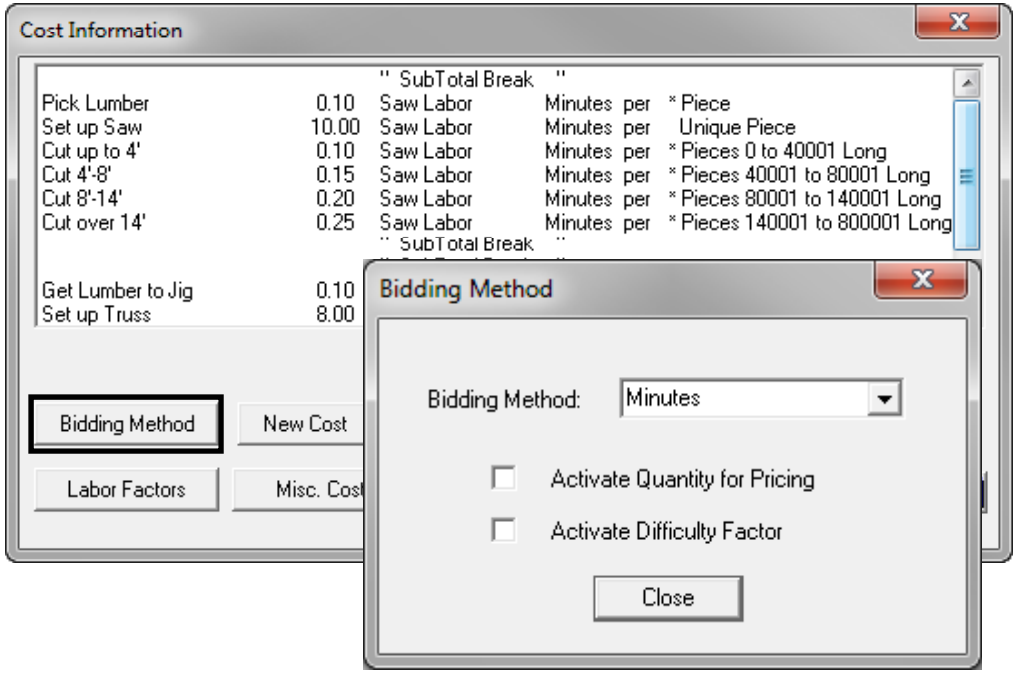
This window shows the types of items used to calculate costs, the rate for each item, the area being calculated, the type of calculation unit being returned and more.

Because pricing varies from plant to plant a specific pricing scenario will not be discussed. However, information will be supplied for the available options within the estimating tool.


Cost Information
'' SubTotal Break ''
Pick Lumber 0.10 Saw Labor Minutes per * Piece
Set up Saw 10.00 Saw Labor Minutes per Unique Piece
Cut up to 4' 0.10 Saw Labor Minutes per * Pieces 0 to 40001 Long
Cut 4'-8' 0.15 Saw Labor Minutes per * Pieces 40001 to 80001 Long
Cut 8'-14' 0.20 Saw Labor Minutes per * Pieces 80001 to 140001 Long
Cut over 14' 0.25 Saw Labor Minutes per * Pieces 140001 to 800001 Long
'' SubTotal Break ''
'' SubTotal Break ''
Get Lumber to Jig 0.10 Fab Labor Minutes per * Piece
Set up Truss 8.00 Fab Labor Minutes per Joint Setup
Bidding Method
New Cost
Remove
Modify
Hanger Costs
Labor Factors
Misc. Costs
OK
Cancel

Estimating – Roof/Floor

Bidding Method


Cost Information
'' SubTotal Break ''
Pick Lumber 0.10 Saw Labor Minutes per * Piece
Set up Saw 10.00 Saw Labor Minutes per Unique Piece
Cut up to 4' 0.10 Saw Labor Minutes per * Pieces 0 to 40001 Long
Cut 4'-8' 0.15 Saw Labor Minutes per * Pieces 40001 to 80001 Long
Cut 8'-14' 0.20 Saw Labor Minutes per * Pieces 80001 to 140001 Long
Cut over 14' 0.25 Saw Labor Minutes per * Pieces 140001 to 800001 Long
'' SubTotal Break ''
Get Lumber to Jig 0.10
Set up Truss 8.00
Bidding Method
New Cost
Labor Factors
Misc. Cost
Bidding Method
Bidding Method: Minutes
Activate Quantity for Pricing
Activate Difficulty Factor
Close

Bidding Method: Used to specify the **Units of Measure** the program will use to calculate the costs of trusses. All information specified within the estimating dialog boxes will be based on the units specified here. For example, if **Minutes** are selected as the Bidding Method, the Labor Costs will be $/ minute, and the length of time it takes to do an activity will be specified in minutes.

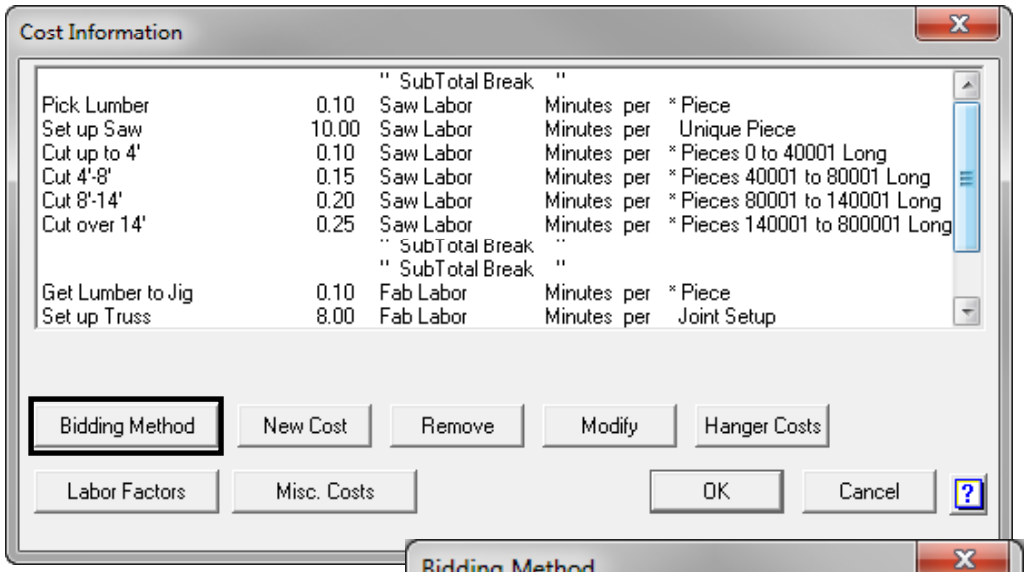
Available options under Bidding Method are;
Minutes, Hours, S.U.'s, R.E.'s and **Dollars.** Two of these, **R.E.** and **S.U.**, need to be discussed in greater detail.

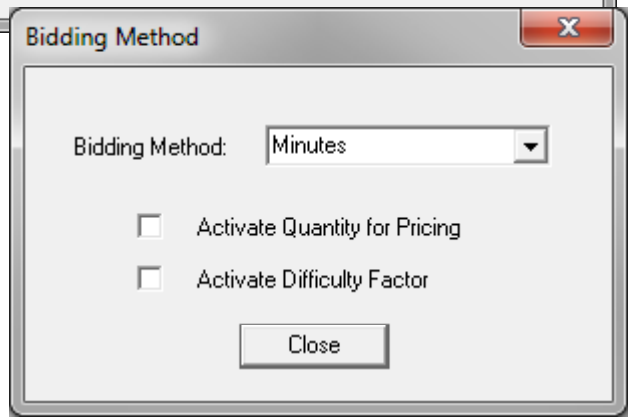
S.U.'s (Schedule Units): One S.U. represents 1/100th of an hour.
This unit of measure was selected because in the tracking process, it automatically converts to Percent of Efficiency. Since there are 100 Schedule Units in an hour, if 100 scheduled units were assigned to a task and only 90 were completed within one hour, the efficiency would be 90%.

R.E.'s (Reasonable Expectancy): This is the calculated amount of time it should take to set up or build a truss. One R.E. also represents 1/100th of an hour. Therefore, if the setup time for a fink truss is 70 R.E.'s (70/100th's of an hour), the allotted time to setup this truss would be 70 x 0.6, which equals 42 minutes.

Estimating – Roof/Floor

Bidding Method (cont)


Cost Information
" SubTotal Break "
Pick Lumber 0.10 Saw Labor Minutes per * Piece
Set up Saw 10.00 Saw Labor Minutes per Unique Piece
Cut up to 4' 0.10 Saw Labor Minutes per * Pieces 0 to 40001 Long
Cut 4'-8' 0.15 Saw Labor Minutes per * Pieces 40001 to 80001 Long
Cut 8'-14' 0.20 Saw Labor Minutes per * Pieces 80001 to 140001 Long
Cut over 14' 0.25 Saw Labor Minutes per * Pieces 140001 to 800001 Long
" SubTotal Break "
" SubTotal Break "
Get Lumber to Jig 0.10 Fab Labor Minutes per * Piece
Set up Truss 8.00 Fab Labor Minutes per Joint Setup
Bidding Method
New Cost
Remove
Modify
Hanger Costs
Labor Factors
Misc. Costs
OK
Cancel



Activate Quantity for Pricing: This option will activate the **Price Qty** box, below the Quantity box, on the Basic window. This allows the designer to modify the price by increasing or decreasing the Price Qty without changing the actual quantity.

Activate difficulty Factor: Difficulty factor offers additional control over pricing.
This option will display a new drop down menu, in Job Basics and Truss Basics, to add or subtract labor cost.

With job level difficulty set to 1.0, the labor will show no change.

A Difficulty factor of .5 will reduce the labor cost to 1/2 the calculated.

NOTE: Difficulty factor behaves differently than any data item In Basics. The difficulty factor at the JOB level is **Multiplied** by the difficulty at the truss level. This was done so the user could apply one difficulty at the job level and then provide further adjustment, if needed, at the truss level.

Estimating – Roof/Floor

New Cost

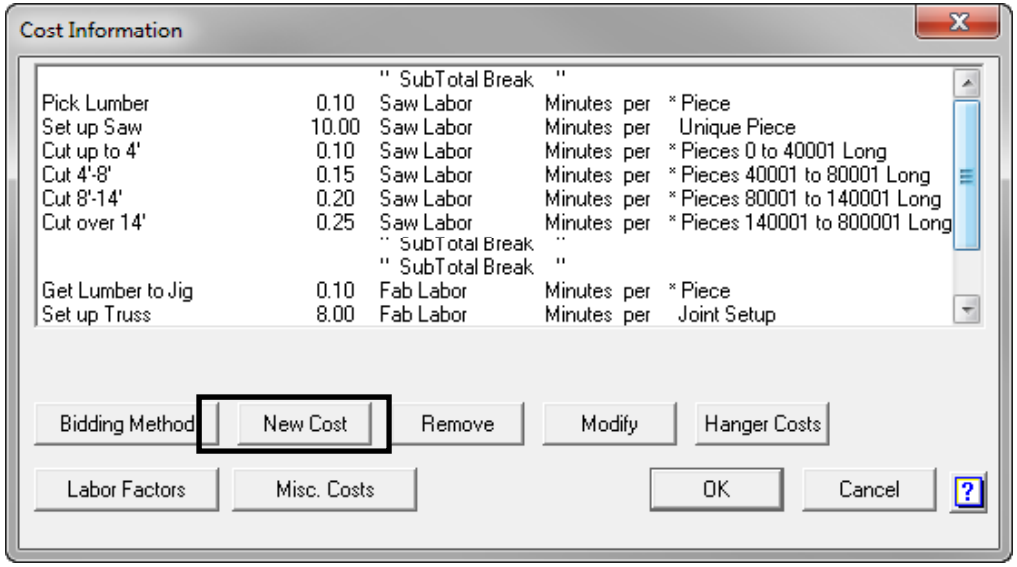
Click the **New Cost** button to open the **New Cost Information** dialog.

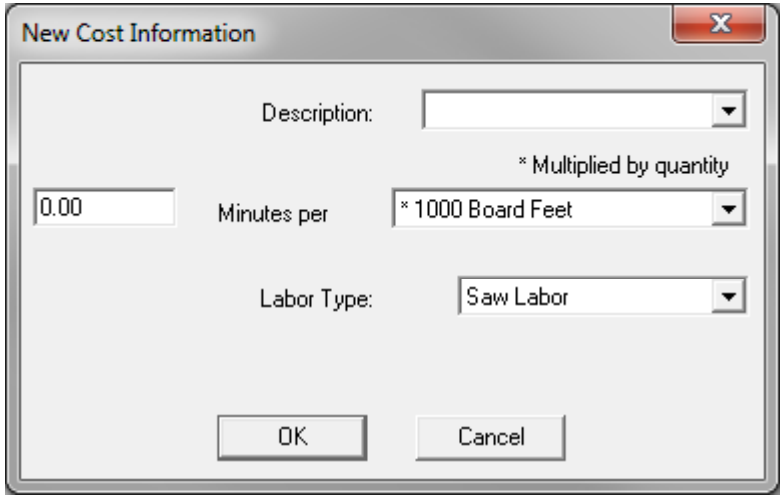
This window is used to add labor pricing items to the **Cost Information** window

Description: Used to specify the costing considerations used in a particular pricing scheme. The designer may add items to this list to generate a specific description list.

The New Cost Information window shows labor calculated using **Minutes**.

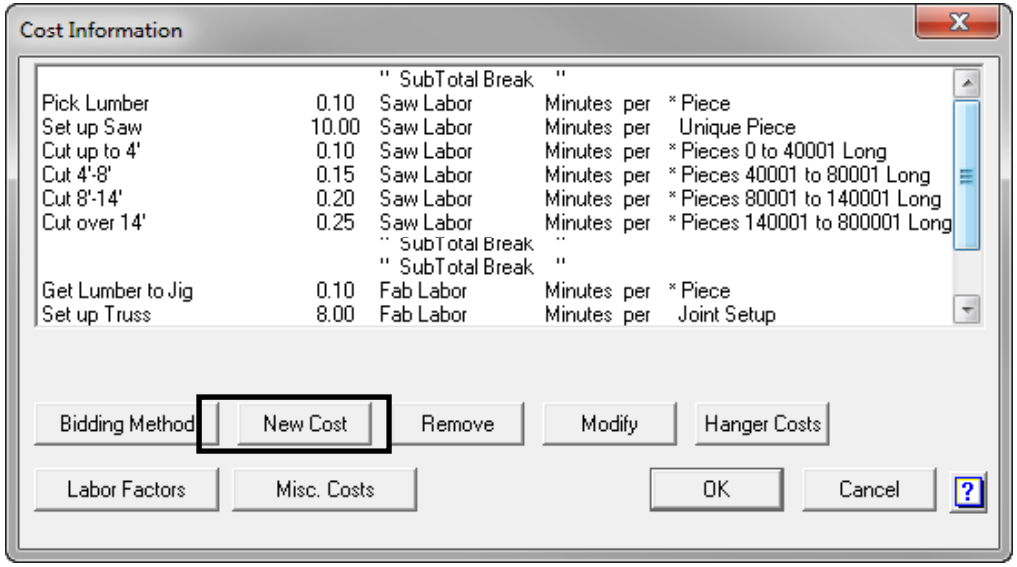
Bidding Methods were discussed on previous pages. Modifying **Labor Factors** and **Labor Types** will be discussed later.

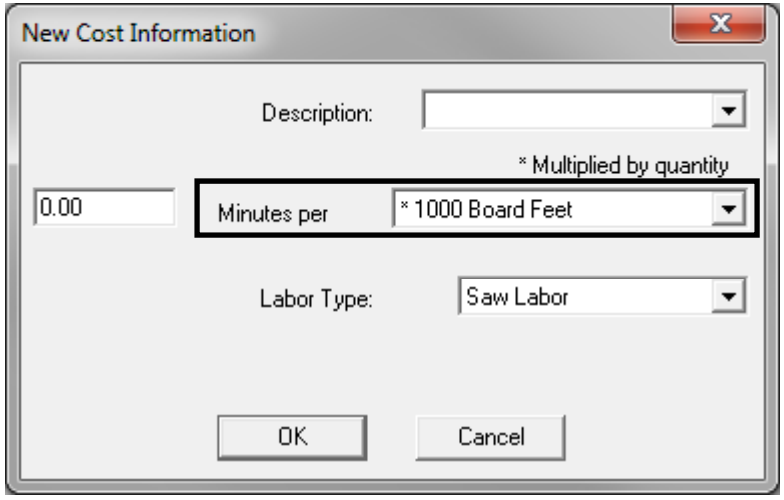

Cost Information
" SubTotal Break "
Pick Lumber 0.10 Saw Labor Minutes per * Piece
Set up Saw 10.00 Saw Labor Minutes per Unique Piece
Cut up to 4' 0.10 Saw Labor Minutes per * Pieces 0 to 40001 Long
Cut 4'-8' 0.15 Saw Labor Minutes per * Pieces 40001 to 80001 Long
Cut 8'-14' 0.20 Saw Labor Minutes per * Pieces 80001 to 140001 Long
Cut over 14' 0.25 Saw Labor Minutes per * Pieces 140001 to 800001 Long
" SubTotal Break "
" SubTotal Break "
Get Lumber to Jig 0.10 Fab Labor Minutes per * Piece
Set up Truss 8.00 Fab Labor Minutes per Joint Setup
Bidding Method
New Cost
Remove
Modify
Hanger Costs
Labor Factors
Misc. Costs
OK
Cancel



Estimating – Roof/Floor

New Cost (cont)


Cost Information
" SubTotal Break "
Pick Lumber 0.10 Saw Labor Minutes per * Piece
Set up Saw 10.00 Saw Labor Minutes per Unique Piece
Cut up to 4' 0.10 Saw Labor Minutes per * Pieces 0 to 40001 Long
Cut 4'-8' 0.15 Saw Labor Minutes per * Pieces 40001 to 80001 Long
Cut 8'-14' 0.20 Saw Labor Minutes per * Pieces 80001 to 140001 Long
Cut over 14' 0.25 Saw Labor Minutes per * Pieces 140001 to 800001 Long
" SubTotal Break "
" SubTotal Break "
Get Lumber to Jig 0.10 Fab Labor Minutes per * Piece
Set up Truss 8.00 Fab Labor Minutes per Joint Setup
Bidding Method
New Cost
Remove
Modify
Hanger Costs
Labor Factors
Misc. Costs
OK
Cancel



1000 Board Feet - Returns a value equal to the number of actual board footage required to build the truss divided by 1000 and multiplied by the quantity of trusses.

Additional Ply - Returns a value equal to: [(No. of Ply's -1) divided by (No. of plies)] multiplied by (No. of Ply's times quantity of trusses in that design).

Angle & Length Set-up Chords - Returns a value equal to the number of top and bottom chord pieces that have different angle setups, regardless of piece length, grade, or species.

Angle & Length Set-up Webs - Returns a value equal to the number of web and stud pieces that have different angle cuts, regardless of piece length, grade, or species. The program does NOT take wedges or sliders into account.

Angle Setup - Returns a value equal to the number of different angle cuts in the design *excluding* square cuts. For example, a Howe type truss, or a four panel over four panel truss with plumb overhangs, has 18 angle setups.

Attic Setup - Returns a value of one for each attic design.

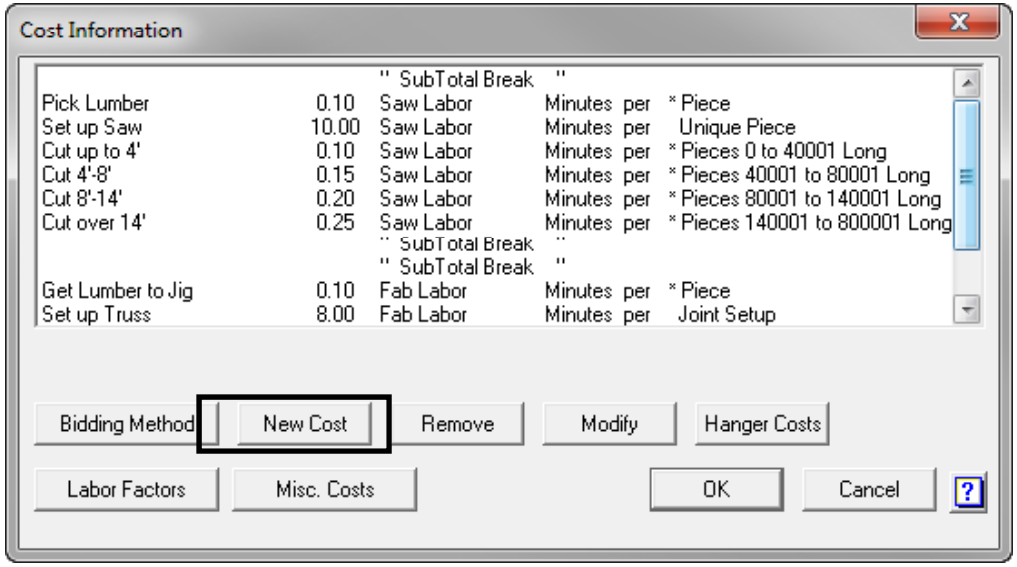
Attic Truss - Returns a value of one for each attic design multiplied by the quantity of trusses in that design.

Estimating – Roof/Floor

New Cost (cont)

Brace - Returns a value equal to the number of braces in the design.
Cut - Returns a value equal to the total number of cuts of all members, including wedges and sliders, for the truss multiplied by the quantity of trusses.
Design - Returns a value equal to one for each truss design.
Double Bevel - Returns a value equal to the number of double bevel cuts on the truss, multiplied by the quantity of trusses in the design.
Joint Setup - Returns a value equal to the number of joints in a design including splices, but not joints caused by special loads.
Joint - Returns a value equal to the number of joints in a truss including splices, but not joints caused by special loads, multiplied by the quantity of trusses.

Length Change - Returns a value equal to the number of "cut from" lengths in the design, where the "cut from" lengths are determined by the values that are input into **Setup,**


Cost Information
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Pick Lumber 0.10 Saw Labor Minutes per * Piece
Set up Saw 10.00 Saw Labor Minutes per Unique Piece
Cut up to 4' 0.10 Saw Labor Minutes per * Pieces 0 to 40001 Long
Cut 4'-8' 0.15 Saw Labor Minutes per * Pieces 40001 to 80001 Long
Cut 8'-14' 0.20 Saw Labor Minutes per * Pieces 80001 to 140001 Long
Cut over 14' 0.25 Saw Labor Minutes per * Pieces 140001 to 800001 Long
" SubTotal Break "
" SubTotal Break "
Get Lumber to Jig 0.10 Fab Labor Minutes per * Piece
Set up Truss 8.00 Fab Labor Minutes per Joint Setup
Bidding Method
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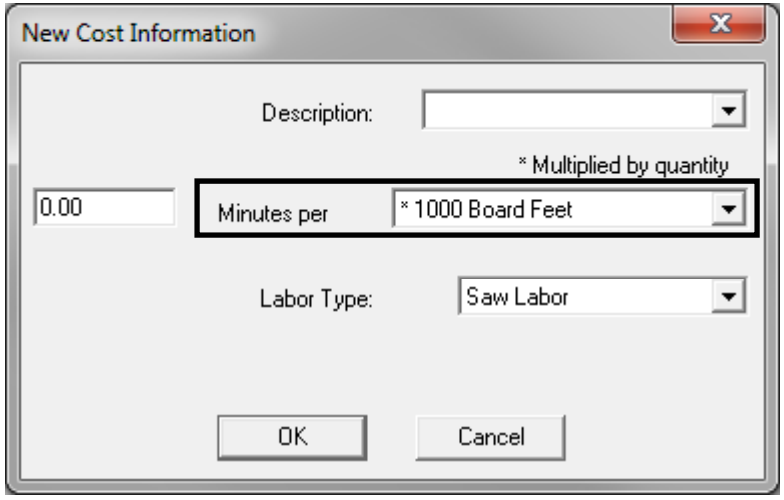
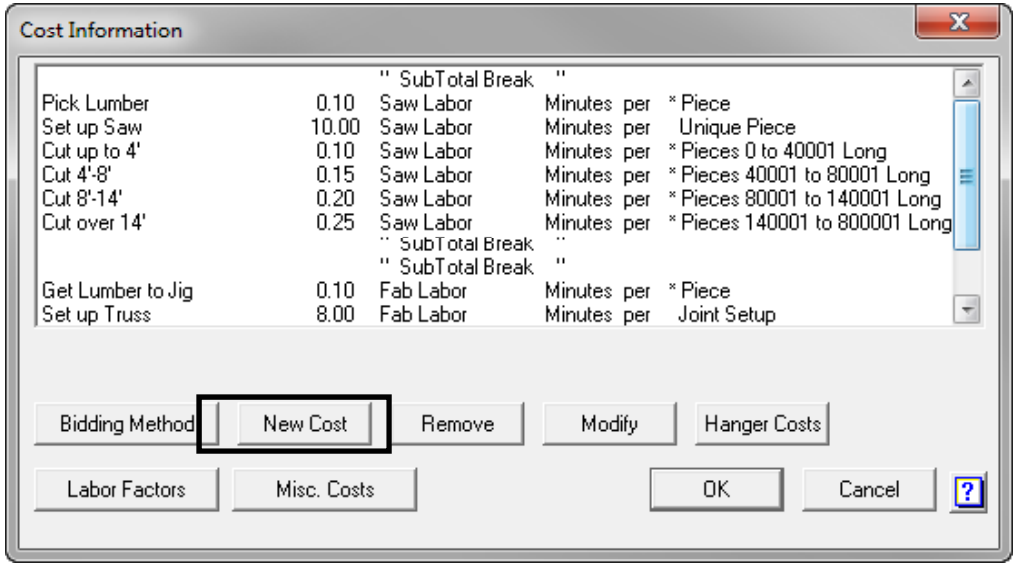
Modify
Hanger Costs
Labor Factors
Misc. Costs
OK
Cancel



Estimating – Roof/Floor

New Cost (cont)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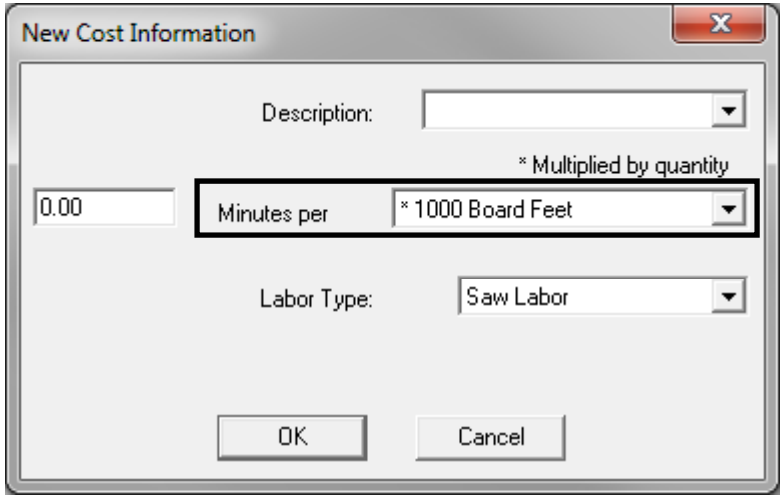
Remove
Modify
Hanger Costs
Labor Factors
Misc. Costs
OK
Cancel



Length Only Set-up Chords - Returns a value equal to the number of length changes for a web (stud) or webs that have the same angle cuts. The member grade, species, or size does not affect this value.

Length Only Set-up Webs - Returns a value equal to the number of length changes for a web (stud) or webs that have the same angle cuts. For example, a Howe type truss will return a value of one, since one of the verticals has a change in length, but the same angle cuts. The member grade, species, or size has no effect on this value.

Linear Foot Gable - Returns a value equal to the span of the gable truss in feet and decimal feet, multiplied by the quantity of trusses in the design.

Linear Foot Setup - Returns a value equal to the number of linear feet, in feet and decimal feet, for the design.

Linear Foot Struct. Gable - Returns a value equal to the span of the structural gable truss in feet and decimal feet, multiplied by the quantity of trusses in the design.

Linear Foot - Returns a value equal to the number of linear footage (span) of the truss, multiplied by the quantity of trusses.

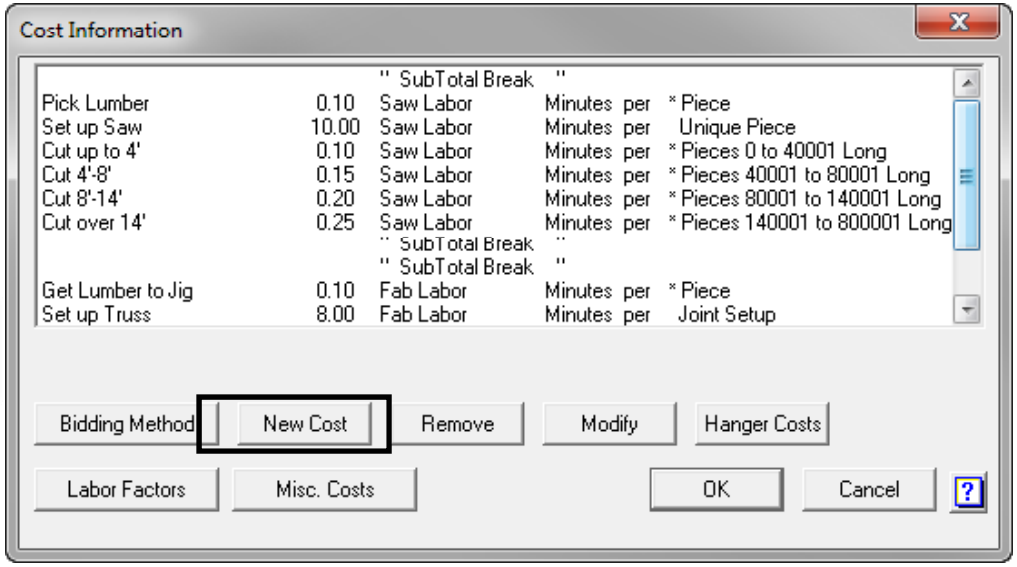
Estimating – Roof/Floor

New Cost (cont)

Lumber Change - Returns a value equal to the number of changes in grade, size, or species in the design.

NOTE: The number of cuts or length changes has NO effect on this value.

No. of Plates Setup - Returns a value equal to one half the total number of plates in the design.
No. of Plates - Returns a value equal to the total number of plates in a design, multiplied by the quantity of trusses.
Per SubTotal Break - This factor will multiply the value obtained by the subtotal break preceding it by the value that is input for the "Per SubTotal Break".
Piece Setup - Returns a value equal to the total number of pieces in the design.
Piece (No Wedge) - Returns a value equal to the number of pieces of lumber in a truss multiplied by the quantity of trusses.
Piece - Returns a value equal to the number of pieces of lumber in a truss, including wedges and sliders, multiplied by the quantity of trusses.


Cost Information
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Pick Lumber 0.10 Saw Labor Minutes per * Piece
Set up Saw 10.00 Saw Labor Minutes per Unique Piece
Cut up to 4' 0.10 Saw Labor Minutes per * Pieces 0 to 40001 Long
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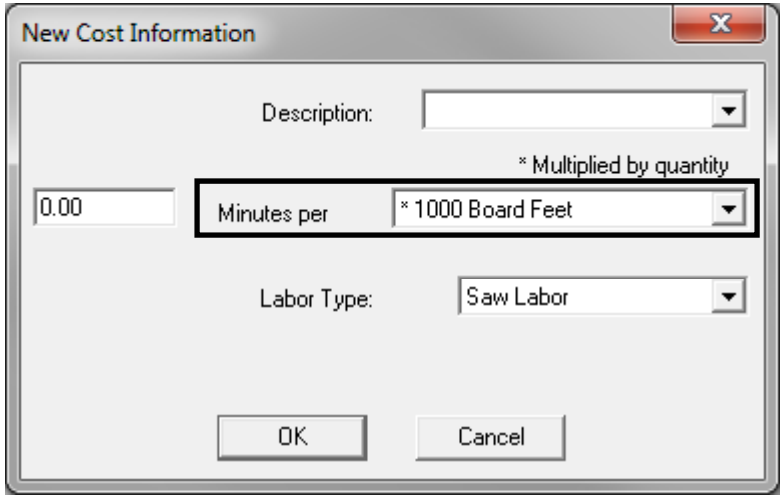
Cut over 14' 0.25 Saw Labor Minutes per * Pieces 140001 to 800001 Long
" SubTotal Break "
" SubTotal Break "
Get Lumber to Jig 0.10 Fab Labor Minutes per * Piece
Set up Truss 8.00 Fab Labor Minutes per Joint Setup
Bidding Method
New Cost
Remove
Modify
Hanger Costs
Labor Factors
Misc. Costs
OK
Cancel



Estimating – Roof/Floor

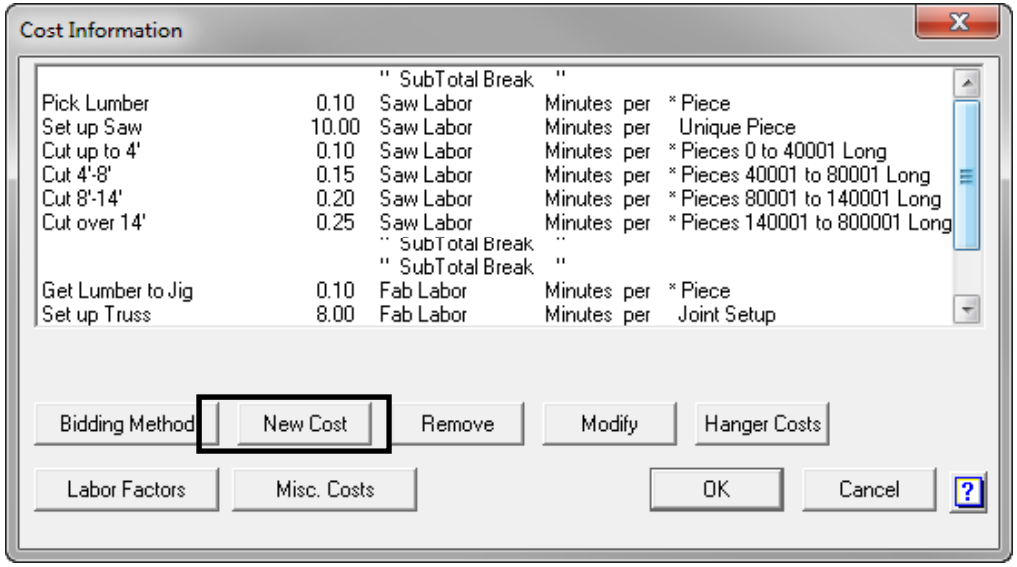
New Cost (cont)

Pieces 0 to 40001 Long - Returns a value equal to the number of pieces (top and bottom chords, webs, studs, wedges and sliders) in the truss that are less than or equal to four feet (4'), multiplied by the quantity of trusses in the design.

Pieces 40001 to 80001 Long - Returns a value equal to the number of pieces (top and bottom chords, webs, studs, wedges and sliders) in the truss that are greater than 4'-1" and less than or equal to 8'-0", multiplied by the quantity of trusses in the design.

Pieces 80001 to 140001 Long - Returns a value equal to the number of pieces (top and bottom chords, webs, studs, wedges and sliders) in the truss that are greater than 8'-1" and less than or equal to 14'-0", multiplied by the quantity of trusses in the design.

Pieces 140001 to 80001 Long - Returns a value equal to the number of pieces (top and bottom chords, webs, studs, wedges and sliders) in the truss that are greater than 14'-1“ and less than or equal to 83'-3", multiplied by the quantity of trusses in the design.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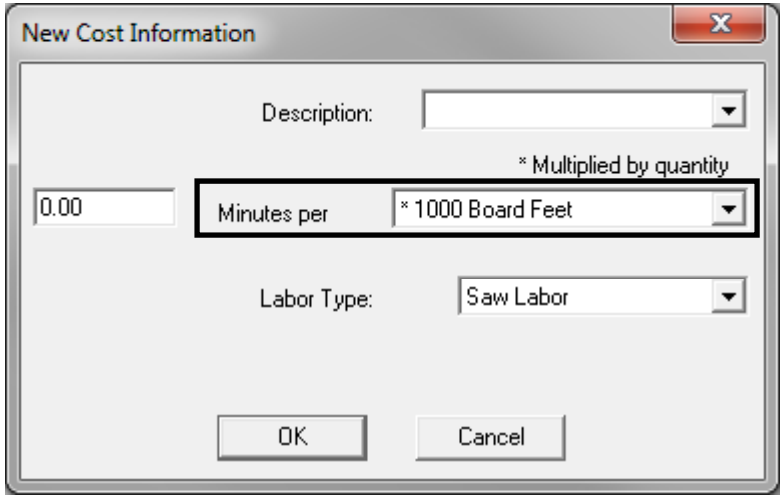
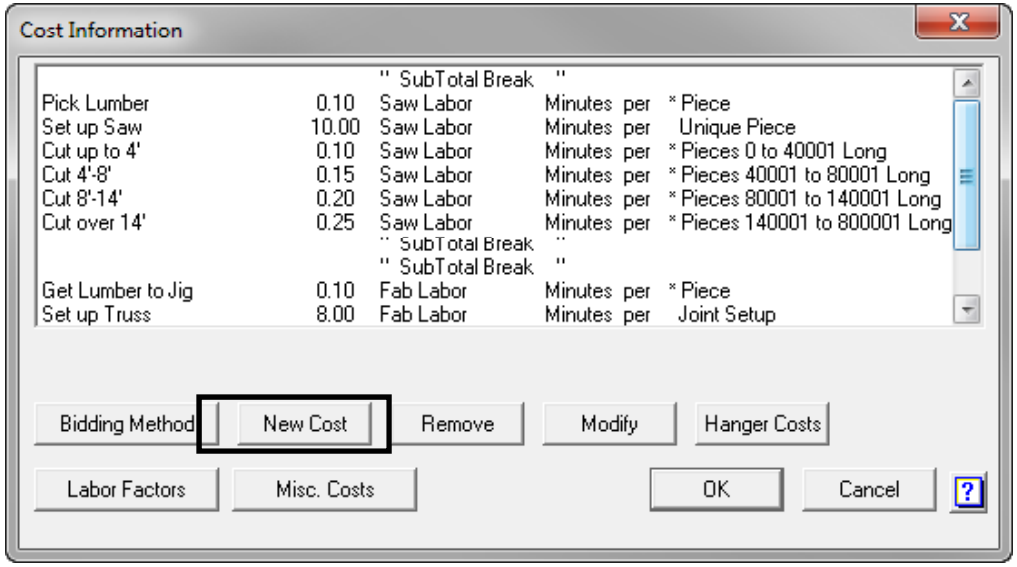
Bidding Method
New Cost
Remove
Modify
Hanger Costs
Labor Factors
Misc. Costs
OK
Cancel



Estimating – Roof/Floor

New Cost (cont)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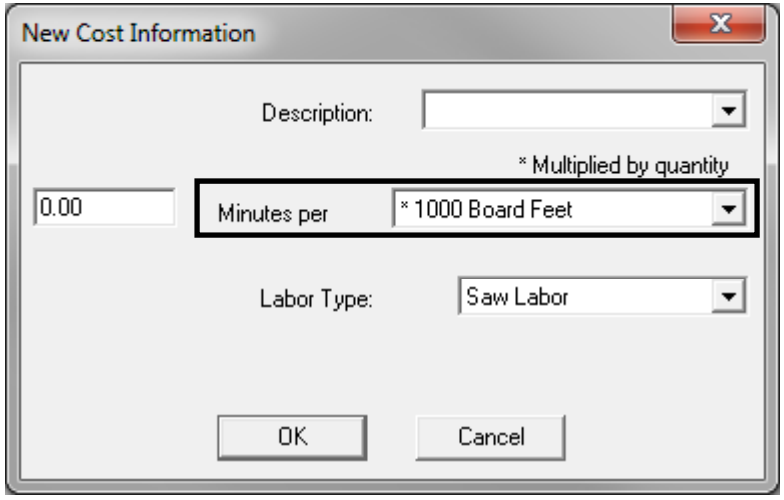


Pieces 208 Wide - Returns a value equal to the number of 2x3 pieces (top and bottom chords, webs, studs, wedges and sliders) in the truss, multiplied by the number of trusses in the design.

Pieces 308 Wide - Returns a value equal to the number of 2x4 pieces (top and bottom chords, webs, studs, wedges and sliders) in the truss, multiplied by the number of trusses in the design.

Pieces 508 Wide - Returns a value equal to the number of 2x6 pieces (top and bottom chords, webs, studs, wedges and sliders) in the truss, multiplied by the number of trusses in the design.

Pieces 704 Wide - Returns a value equal to the number of 2x8 pieces (top and bottom chords, webs, studs, wedges and sliders) in the truss, multiplied by the number of trusses in the design.

Pieces 904 Wide - Returns a value equal to the number of 2x10 pieces (top and bottom chords, webs, studs, wedges and sliders) in the truss, multiplied by the number of trusses.

Pieces 1104 Wide - Returns a value equal to the number of 2x12 pieces (top and bottom chords, webs, studs, wedges and sliders) in the truss, multiplied by the number of trusses.

Estimating – Roof/Floor

New Cost (cont)

Pitch Break - Returns a value equal to the number of pitch breaks, either top or bottom chord, for the truss multiplied by the number of trusses.

Pitch Break Bottom - Returns a value equal to the number of pitch breaks on the bottom chord for the design, multiplied by the number of trusses.

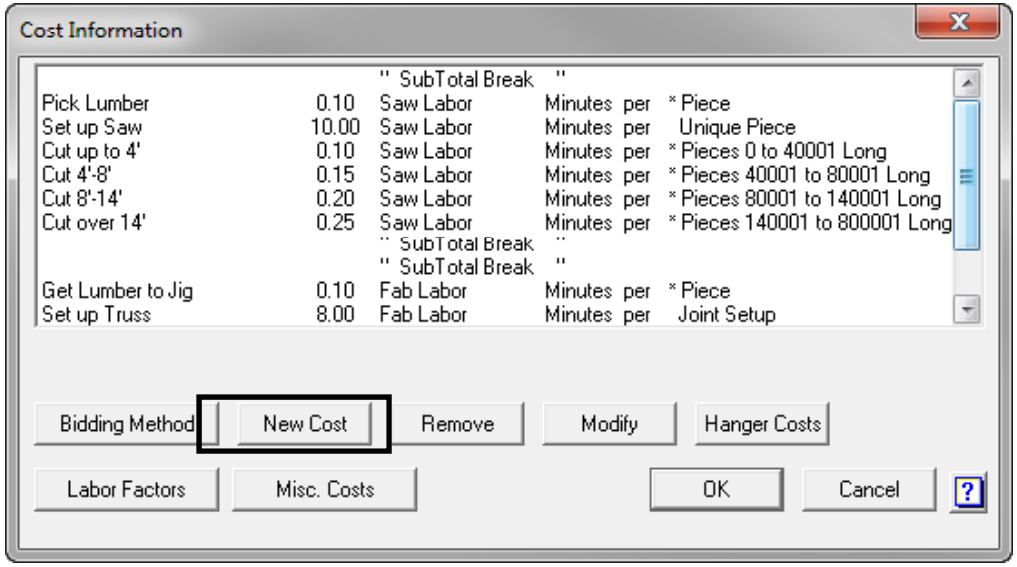
> ***NOTE:*** Heel joints are NOT considered pitch breaks.

Pitch Break Top - Returns a value equal to the number
of pitch breaks on the top chord for the design, multiplied by the number of trusses.

Pitch Break Setup - Returns a value equal to the number of pitch break setups in a design, either top or bottom chord, *excluding* the heels.

Pitch Break Setup Bottom - Returns a value to the number of pitch break setups on the bottom chord only for the design, *excluding* any heel joints.

Pitch Break Setup Top - Returns a value to the number of pitch break setups on the top chord only for the design, *excluding* any heel joints.


Cost Information
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Pick Lumber 0.10 Saw Labor Minutes per * Piece
Set up Saw 10.00 Saw Labor Minutes per Unique Piece
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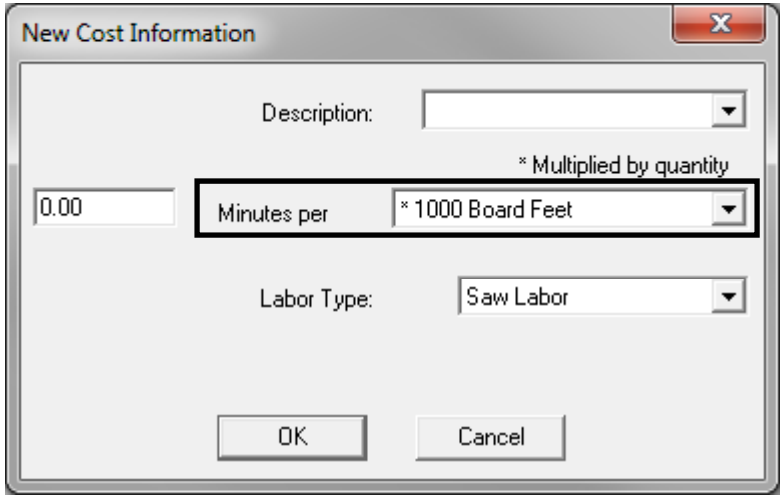
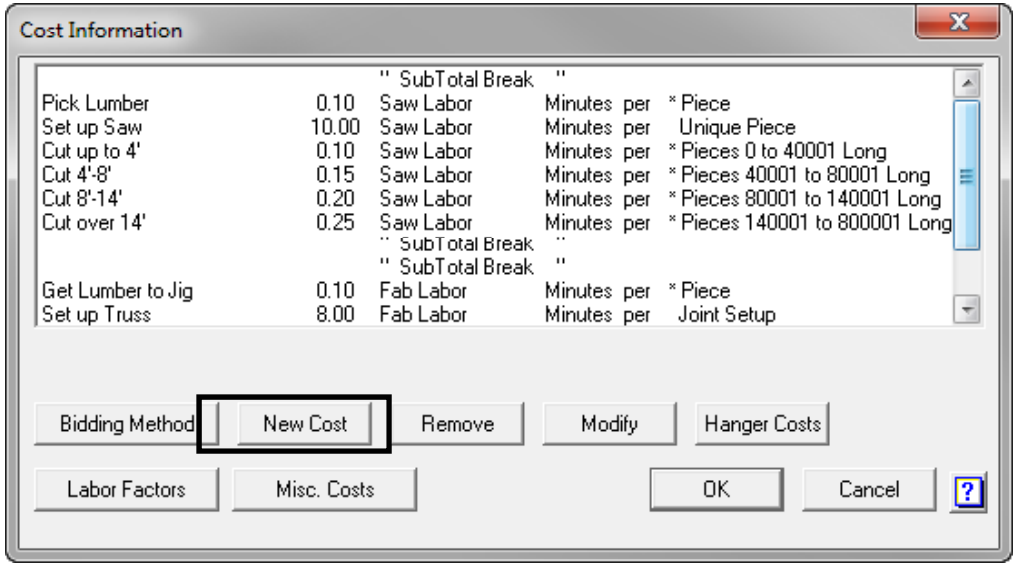
Cut over 14' 0.25 Saw Labor Minutes per * Pieces 140001 to 800001 Long
" SubTotal Break "
" SubTotal Break "
Get Lumber to Jig 0.10 Fab Labor Minutes per * Piece
Set up Truss 8.00 Fab Labor Minutes per Joint Setup
Bidding Method
New Cost
Remove
Modify
Hanger Costs
Labor Factors
Misc. Costs
OK
Cancel



Estimating – Roof/Floor

New Cost (cont)

Sheathing Piece - Returns a value equal to the number of pieces multiplied by the number of trusses.
Sheathing Plies - Returns a value equal to the No. of Ply's divided by the No. of plies multiplied by No. of Ply's times quantity of sheets
Sheathing Square Footage **-** Returns a value equal to the number of sheets per truss divided by 32, for 4'X8' and 36 for 4'X9' sheets, time the number of trusses.
Single Bevel - Returns a value equal to the number of single bevel cuts on the truss, multiplied by the quantity of trusses.
SubTotal Break - The user may bracket a group of cost factors with the "SubTotal Break" option by placing a "SubTotal Break" at the TOP and BOTTOM of the factors. This will then obtain a subtotal of those costs on the estimate sheet. See the "Cost Information menu screen" figure at the beginning of this section, **Estimating**.
Truss - Returns a value equal to the number of total quantity of trusses for the specific design.
Unique Piece - Returns a value equal to the number of pieces that are unique to the design.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Remove
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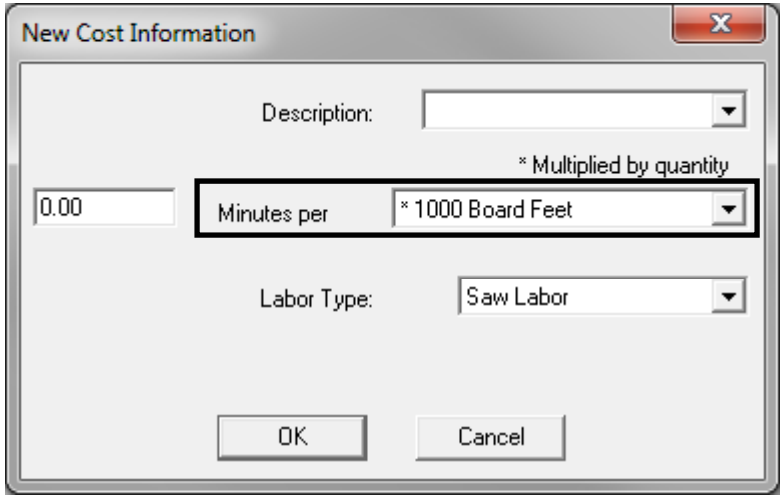
Misc. Costs
OK
Cancel



Estimating – Roof/Floor

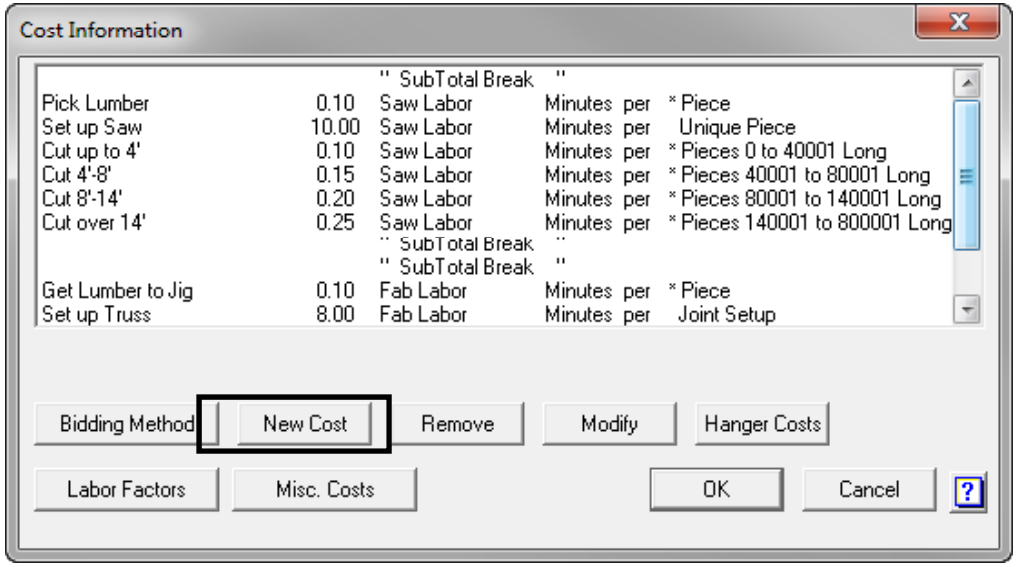
New Cost (cont)

Width Change Chords - Returns a value equal to the number of changes in top or bottom chord lumber widths. A vertical at the stubbed end of a truss or a top or bottom chord running from top to bottom is considered a chord and will be used by this factor. For example, a 2x6 top and bottom chord truss stubbed off one end with a 2x4 end vertical will return a value of one.

Width Change Webs - Returns a value equal to the number of changes in webs or stud lumber width. Wedges and sliders are NOT considered in this factor.

Pieces 408 Wide - Returns a value equal to the number of 2x5 pieces (top and bottom chords, webs, studs, wedges and sliders) in the truss, multiplied by the number of trusses in the design.

NOTE: A member of a different species or grade is a unique piece, even if the number of cuts, angles and lengths are the same. The number of unique pieces is equal to the number of pieces on the single page cutting sheet for that design.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Misc. Costs
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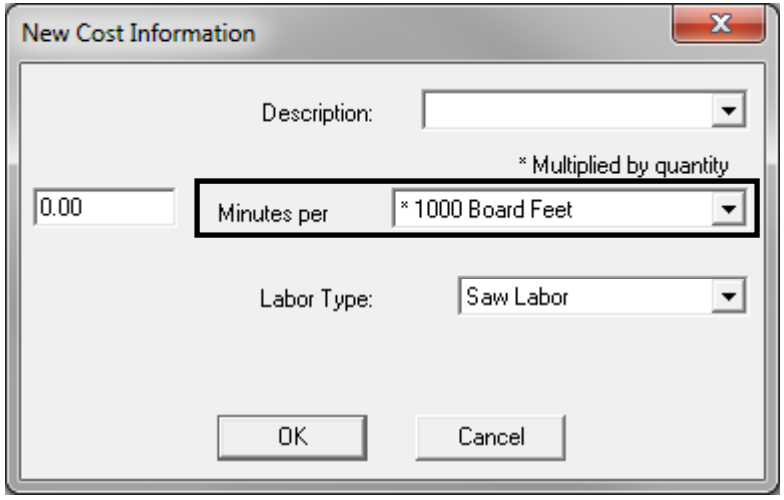
Cancel



Estimating – Roof/Floor

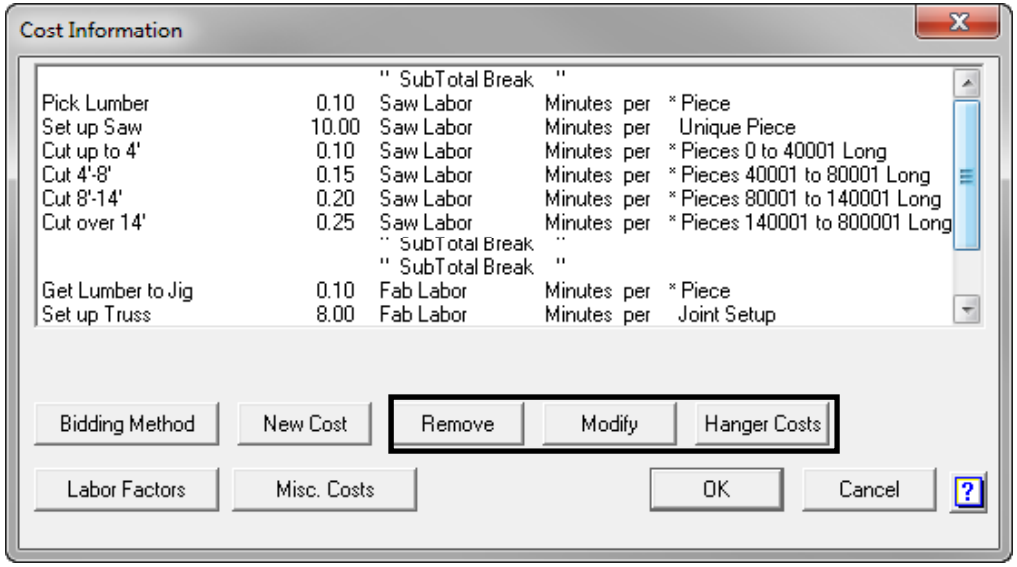
Remove – Modify – Hanger Costs

Remove: To remove a cost information category, highlight that category and click Remove.

WARNING: There is no undo for this feature, and no prompt for **'are you sure'**. Any category deleted will have to be added manually.

Modify: To modify an item in the **Cost Information** window, click the item from the list and click the Modify button. This will open the **Modify Cost Information** window with the selected items information displayed. Make any necessary changes and click **OK**

Hanger Costs: The **Hanger Costs** dialog contains the option to **Include** a **Hanger Requisition** with the other cost output.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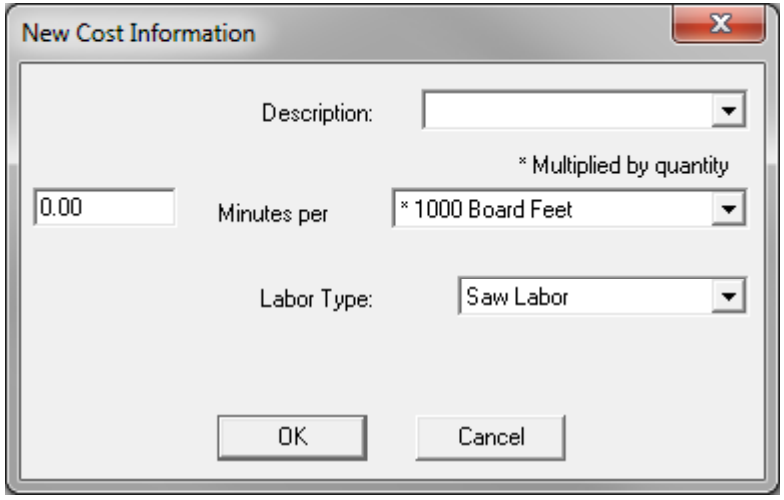
Cancel



Estimating – Roof/Floor

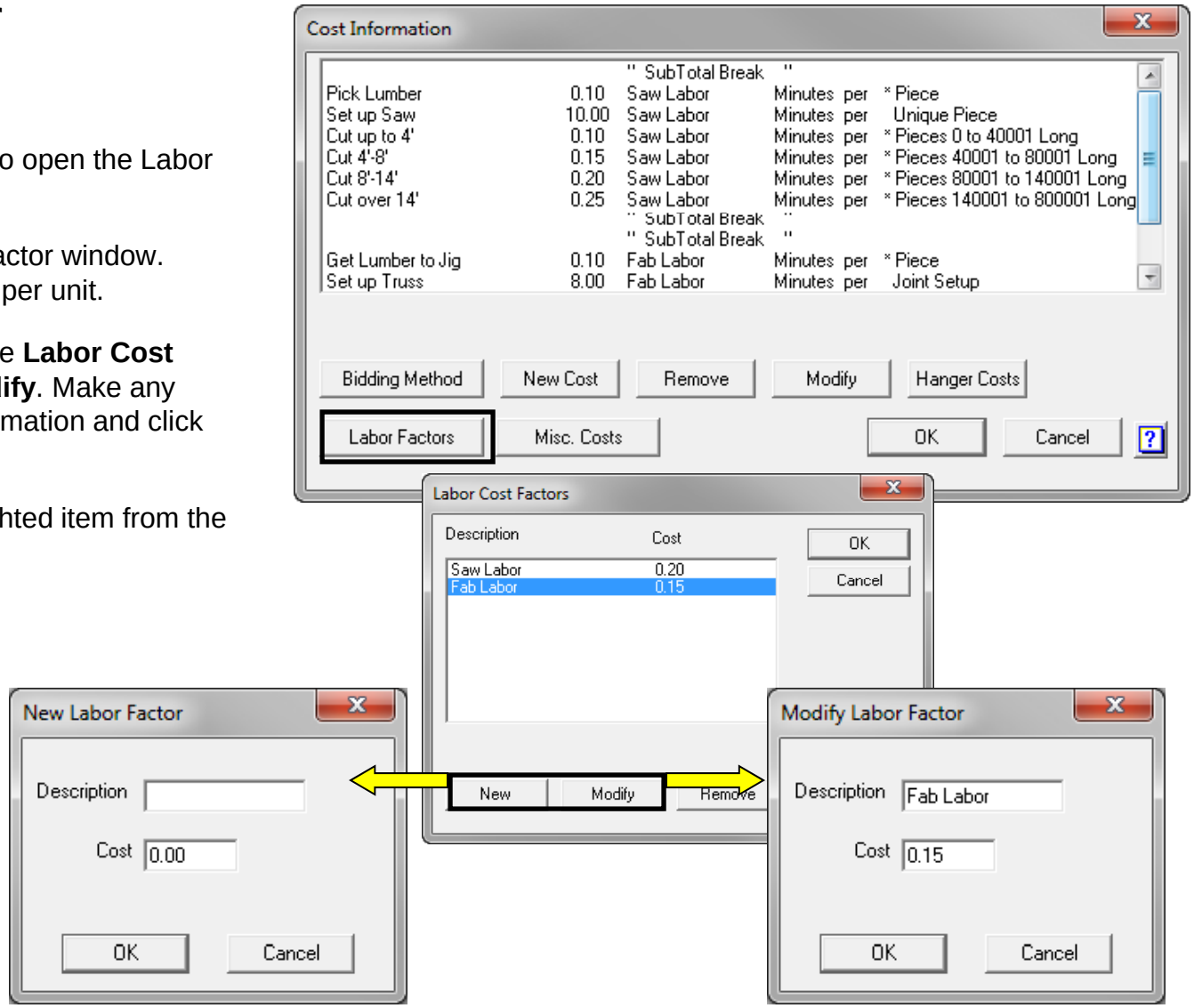
Labor Factors

Click the Labor factors button to open the Labor Cost Factors window.

New: Opens the New Labor Factor window. Enter a Description and a cost per unit.

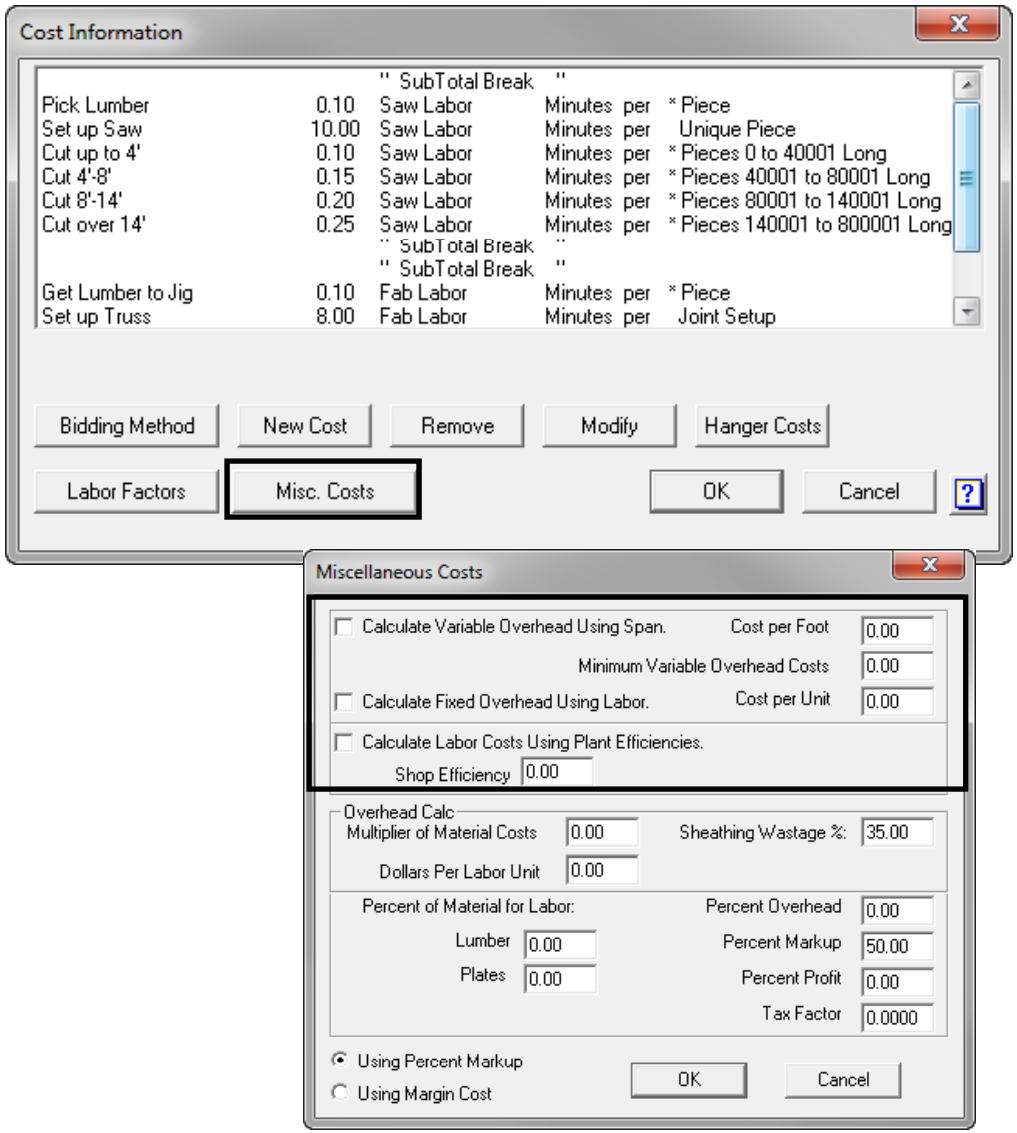
Modify: Select an item from the **Labor Cost Factors** window and click **Modify**. Make any necessary changes to the information and click ok.

Remove: Removes the highlighted item from the Labor Cost factors window.



Estimating – Roof/Floor

Misc. Costs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Remove
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Labor Factors
Misc. Costs
OK
Cancel
Miscellaneous Costs
Calculate Variable Overhead Using Span.
Cost per Foot 0.00
Minimum Variable Overhead Costs 0.00
Calculate Fixed Overhead Using Labor.
Cost per Unit 0.00
Calculate Labor Costs Using Plant Efficiencies.
Shop Efficiency 0.00
Overhead Calc
Multiplier of Material Costs 0.00
Sheathing Wastage %: 35.00
Dollars Per Labor Unit 0.00
Percent of Material for Labor:
Lumber 0.00
Plates 0.00
Percent Overhead 0.00
Percent Markup 50.00
Percent Profit 0.00
Tax Factor 0.0000
Using Percent Markup
Using Margin Cost
OK
Cancel

Calculate Variable Overhead Using Span: When checked, this option causes the program to calculate your overhead on a truss based on the span of the current truss.

Cost per Foot: Amount of overhead that will be added for each foot of the truss.

Minimum Variable Overhead Costs: Minimum amount charged for overhead on a truss

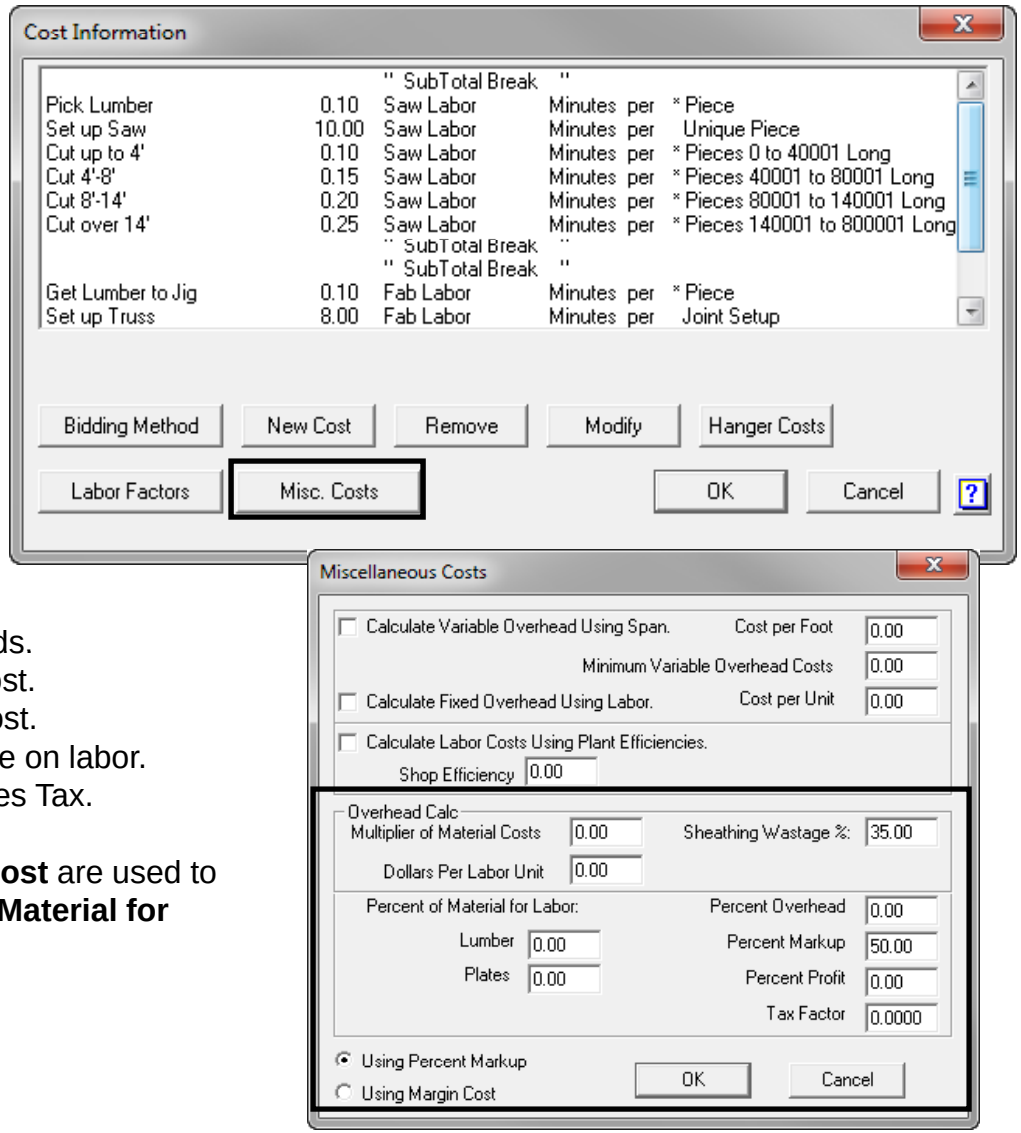
Cost Per Unit: Amount charged per unit (set up in Cost Information window.

Calculate Fixed Overhead using Labor: Check this box to have the program calculate labor based on a fixed price rather than variably according to span.

Calculate Labor Costs Using Plant Efficiencies:
Check this box to have the program calculate labor costs according to a **Shop Efficiency** value entered in this section. The **Shop Efficiency** value will be used to determine the cost of labor in the plant.

Estimating – Roof/Floor

Misc. Costs (cont)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Cost per Foot 0.00
Minimum Variable Overhead Costs 0.00
Calculate Fixed Overhead Using Labor.
Cost per Unit 0.00
Calculate Labor Costs Using Plant Efficiencies.
Shop Efficiency 0.00
Overhead Calc
Multiplier of Material Costs 0.00
Sheathing Wastage %: 35.00
Dollars Per Labor Unit 0.00
Percent of Material for Labor:
Lumber 0.00
Plates 0.00
Percent Overhead 0.00
Percent Markup 50.00
Percent Profit 0.00
Tax Factor 0.0000
Using Percent Markup
Using Margin Cost
OK
Cancel

Overhead Calc: This section allows the user to set the default values for calculating overhead.
Multiplier of Material Costs: Amount that will be multiplied by the material cost to determine how much will be charged over cost.
Dollars Per Labor Unit: Amount of money spent on each labor unit which was set up in the Cost Information window.
Sheathing Wastage %: The amount of waste per job.
Percent of Material for Labor: Enter the Percentage of material that will be considered in determining labor costs in the Lumber and Plates fields.
Percent Overhead - The percent to be made over cost.
Percent Markup - The percent to be charged over cost.
Percent Profit - Enter the amount of profit to be made on labor.
Tax Factor - Enter a value for State and/or Local Sales Tax.

NOTE: Using Percent Markup and **Using Margin Cost** are used to alter the dialog and calculation under the **Percent of Material for Labor** section.

Estimating - Posi-Struts

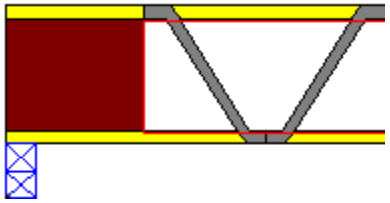
Enter the amount per linear foot that will be used to calculate labor cost.

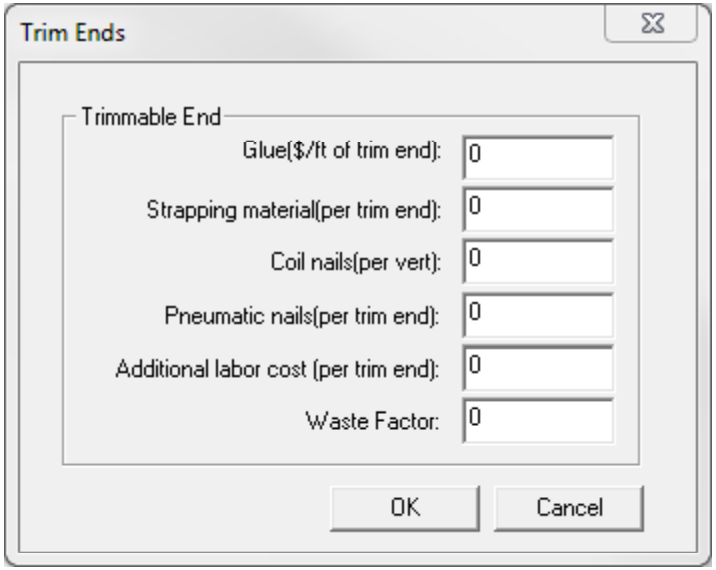
The **Trimmable Ends** button will open the **Trim Ends** window.

Estimating

Trimmable Ends

Allows the user to assign additional cost for miscellaneous items used to produce Trimmable Ends.

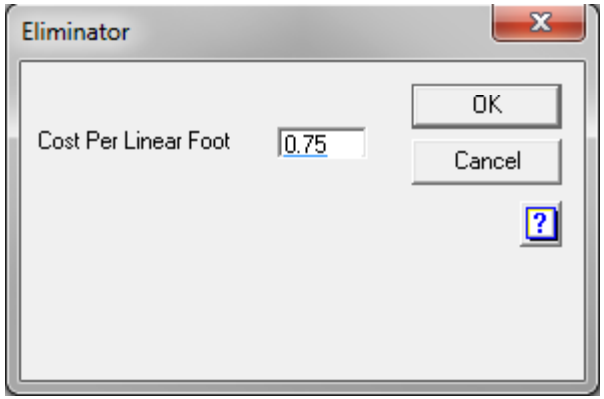




Estimating

Eliminator

Allows the user to assign a cost per linear foot of Eliminator.



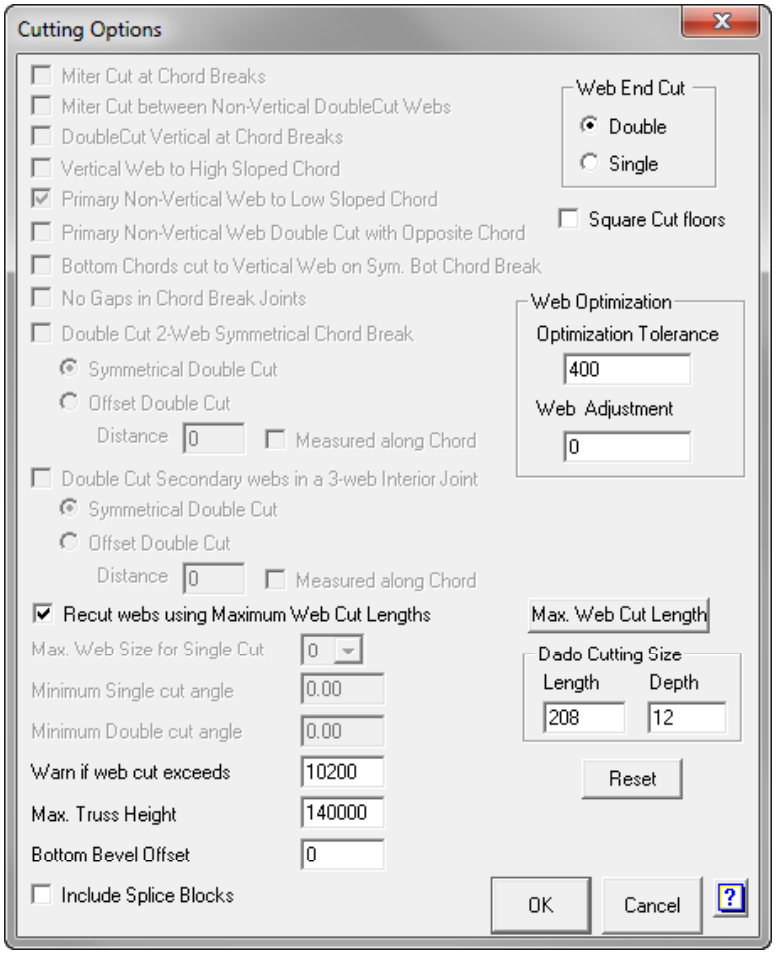
Geometry

Cutting Options - Double Cut

NOTE: All options grayed out are specific to **Canadian Engineering**. Selecting the **Single** option, under **Web End Cuts**, will activate gray switches but will only display one common truss in the shapes window.

Web End Cut: Controls whether webs are **Double** cut or **Single** cut.

Double: With this option selected, many items are grayed out and do not apply. Double is the standard default.

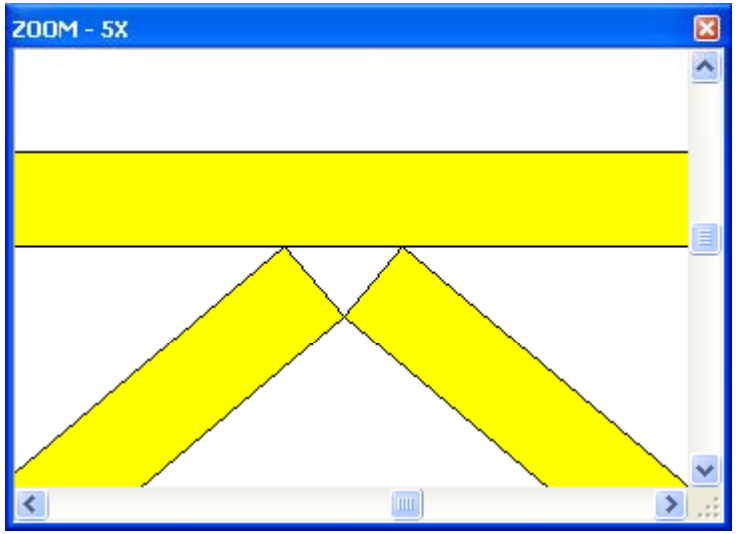


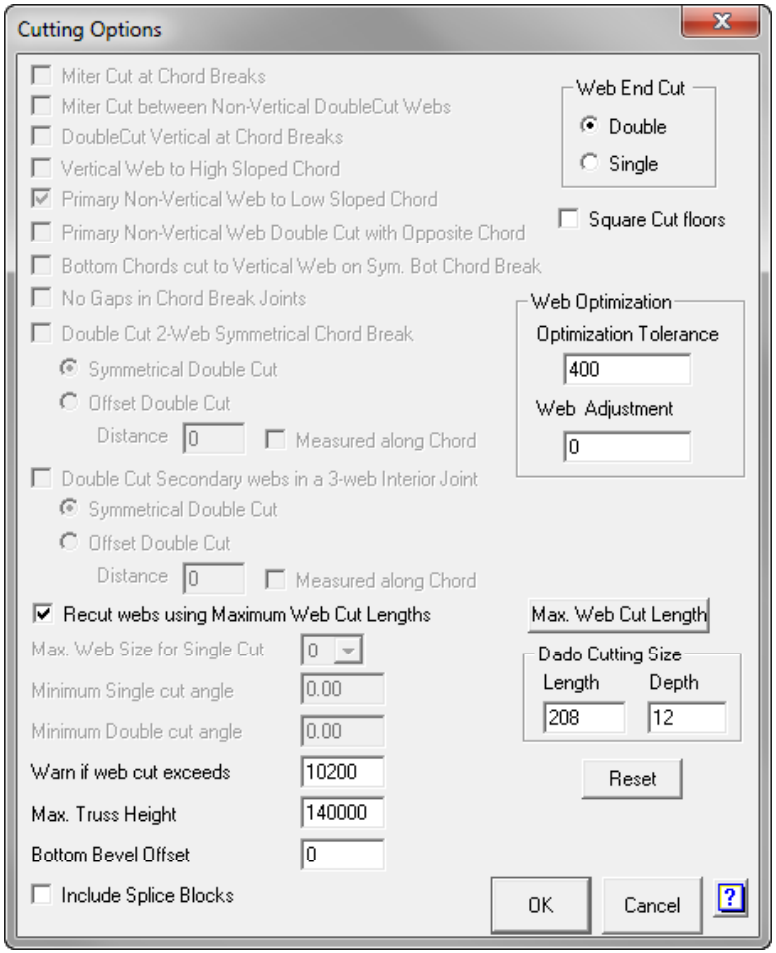
Geometry

Cutting Options - Double Cut (cont)

Square Cut Floors: Will gray out the Web End Cut radio buttons.

NOTE: Special jigging will need to be addressed to fabricate floor trusses using square cut webs





Geometry

Cutting Options - Double Cut (cont)

Web Optimization:

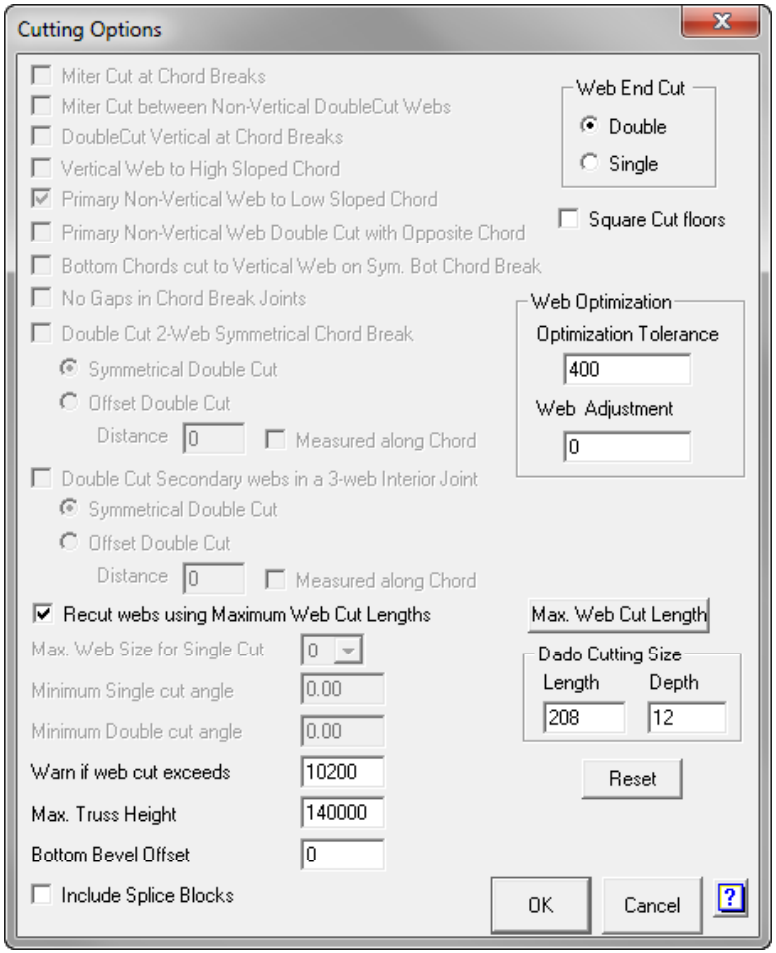
Optimization Tolerance: Distance a web joint will shift in an effort to optimize the web to stock length.

Web Adjustment: Controls the stock length displays.

Set to **zero**, all stock length web material will be displayed as actual stock length.

Set to **-8,** all stock lengths will be displayed as ½" shorter than stock length. This option has several purposes but the primary is, for example, to allow two 5' boards to be cut from a 10' stock length.

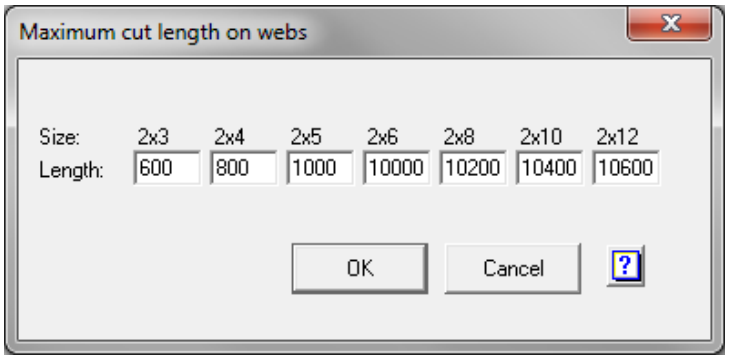
Turb-O-Web: Allows the program to recognize Turb-O-Webs in your cutting. The cutting will be shown as traditional cutting, with one or two end cuts on each web. However, every end of every web will be a rounded end for plating purposes. A note will be printed on the engineering drawing stating "Plates shown assume Turb-O-Webs."



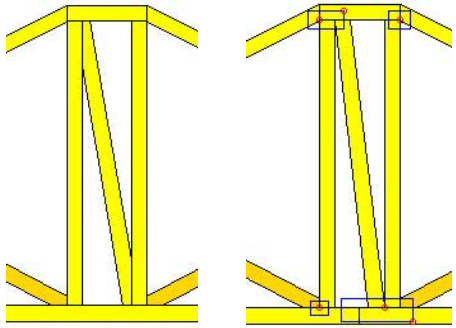
Geometry

Cutting Options - Double Cut (cont)

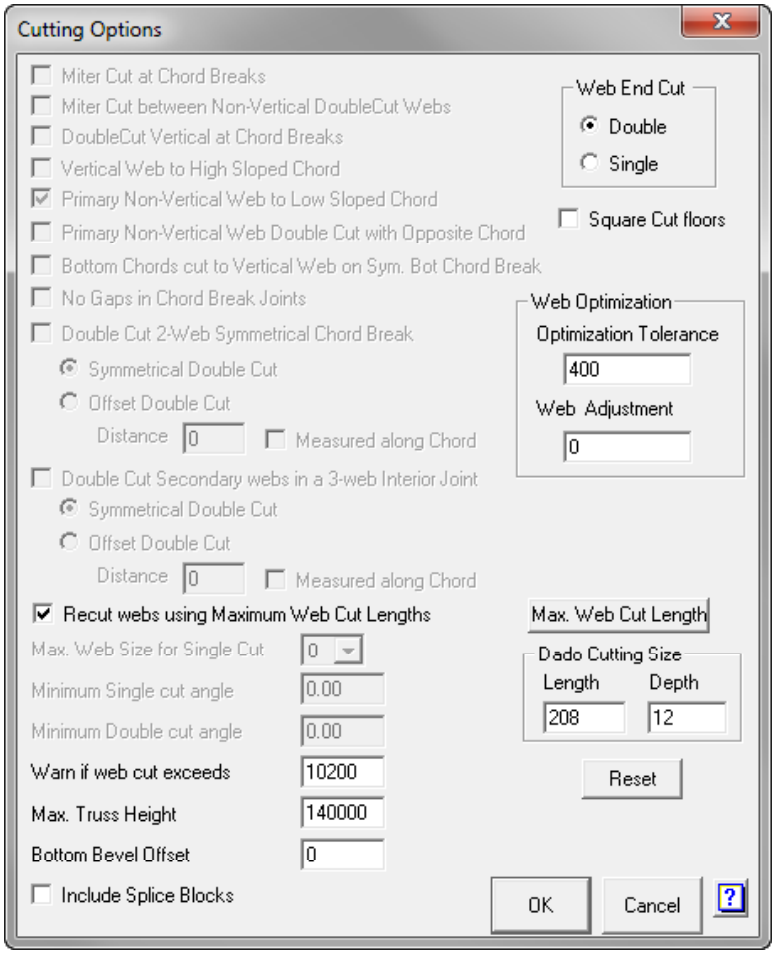
Recut Webs Using Maximum Web Cut Lengths: Check this box to activate the Max. Web Cut Length button. This option allows the user to specify the maximum cut length on webs for each material depth.



When Max Cut Length is exceeded, the web will change to a single cut when the truss is analyzed.



Before analysis **After analysis**



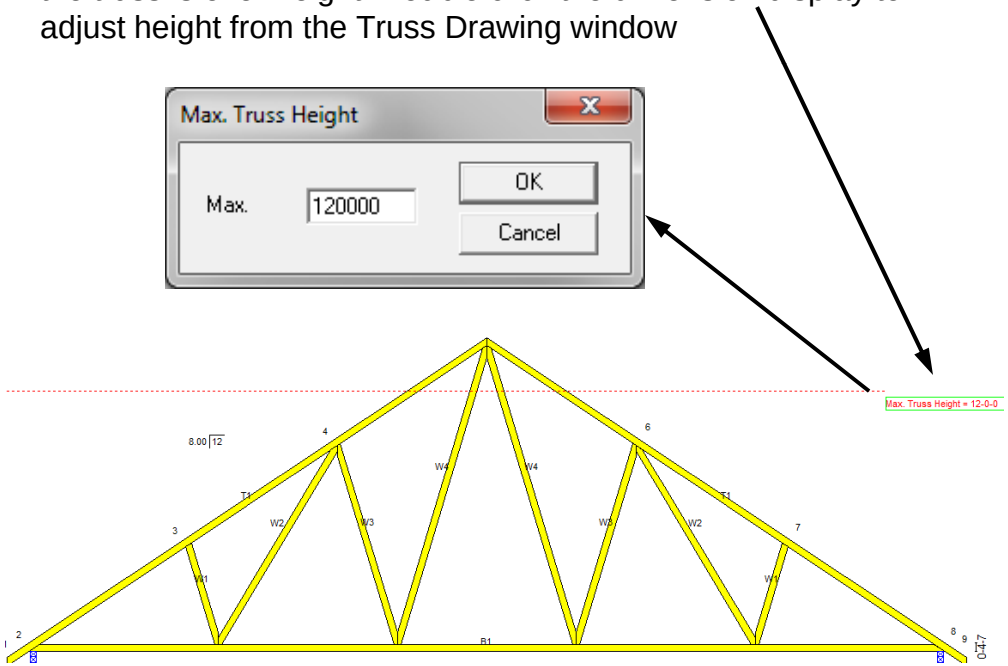
Dado Cutting Size: Specify the length and depth of dado cuts.

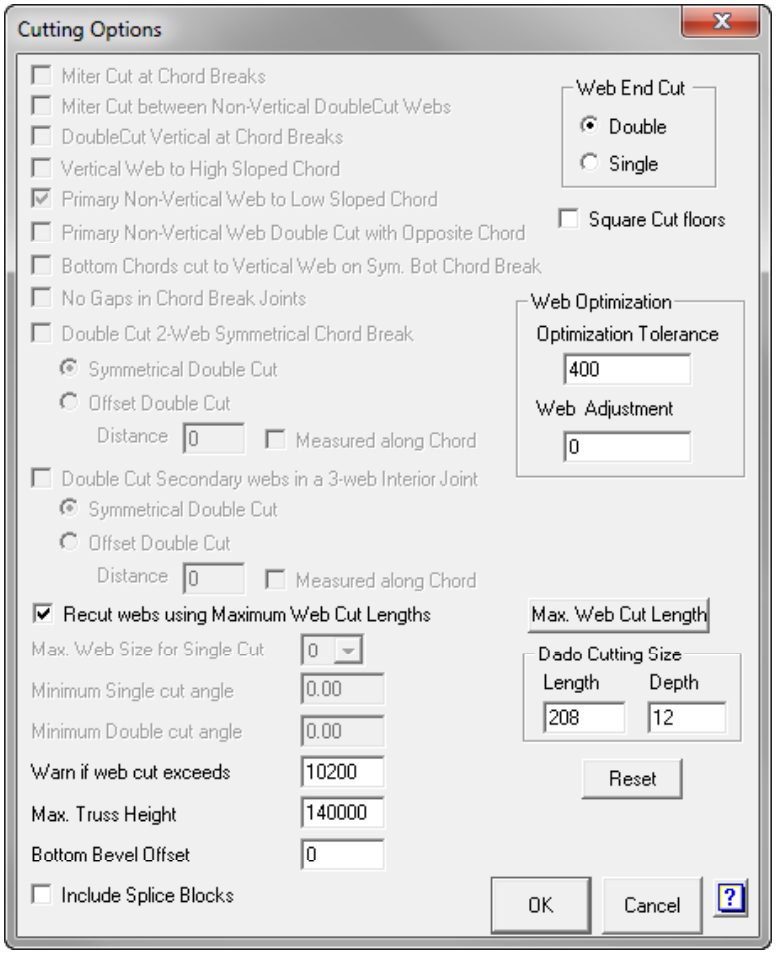
Geometry

Cutting Options - Double Cut (cont)

Warn if Web Cut Exceeds: Makes the user aware of cuts that are too long for the existing equipment to handle.

Max. Truss Height: Any truss exceeding this dimension will cause a red line to appear on the drawing window showing the truss is over height. Double click the dimension display to adjust height from the Truss Drawing window





Geometry

Cutting Options - Double Cut (cont)

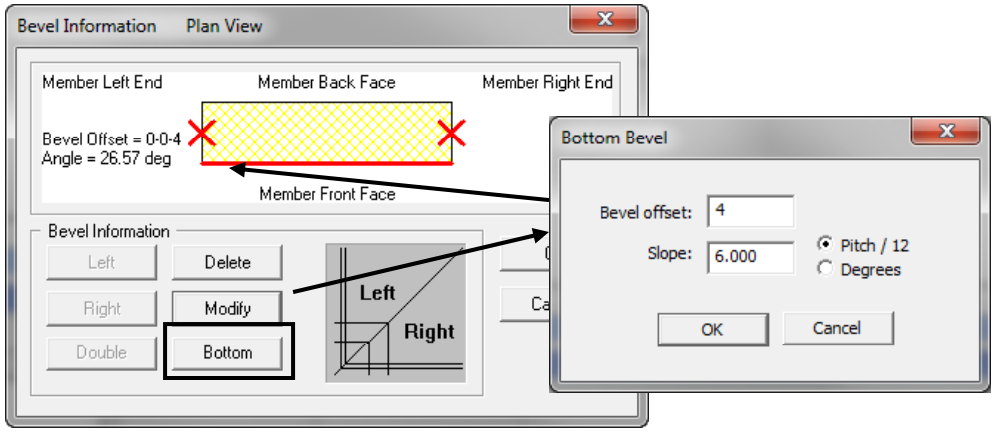
Bottom Bevel Offset: Enter the depth of the bevel required.

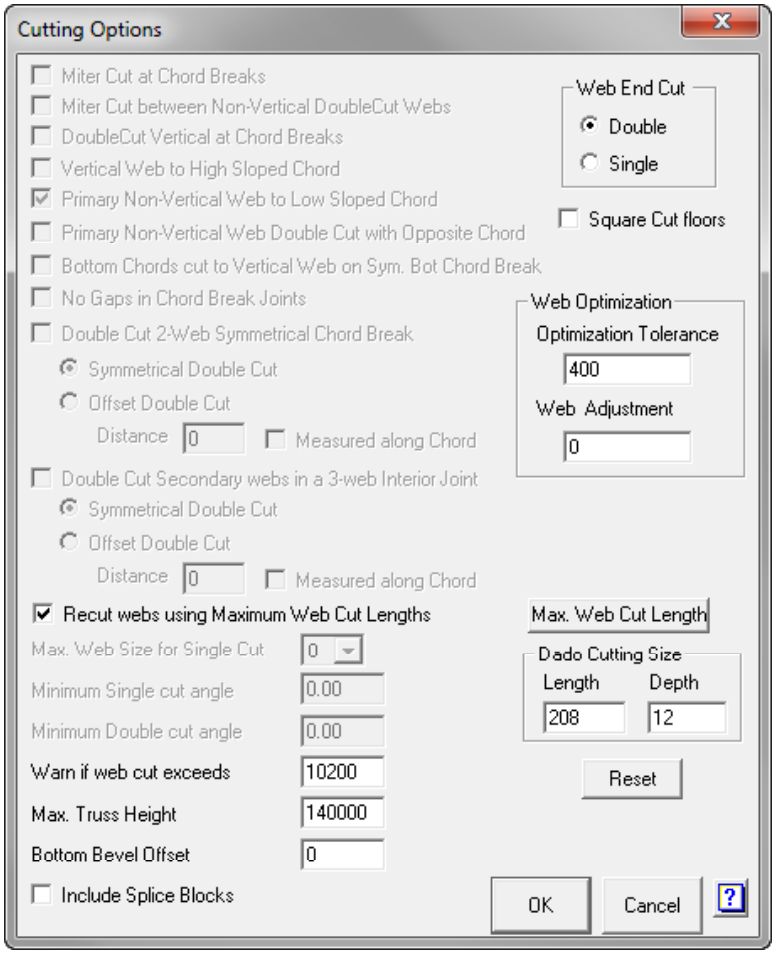
In **Versatruss** click the Bevel button.

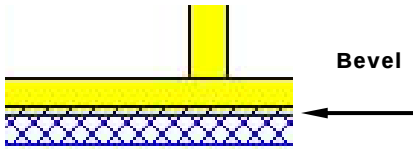
Click the **Bottom** button

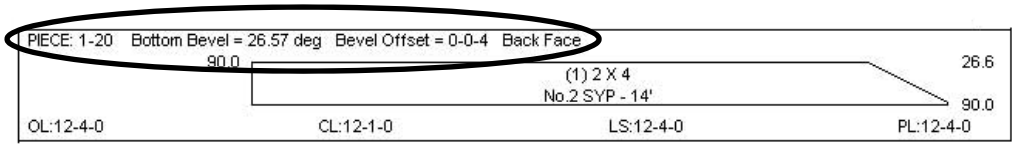
Click the **Member Face** to slope the bevel towards

Click **Modify** to make changes to Bottom Bevel defaults.









Geometry

Gable/Filler

This section allows the user to set up default webbing parameters for **Gables**, **Fillers**, **Valleys**, **California Hips and Piggybacks**. Information entered here will be the default used by the program. These defaults may be modified at any time, on an individual truss or job basis, leaving your manufacturer defaults intact.

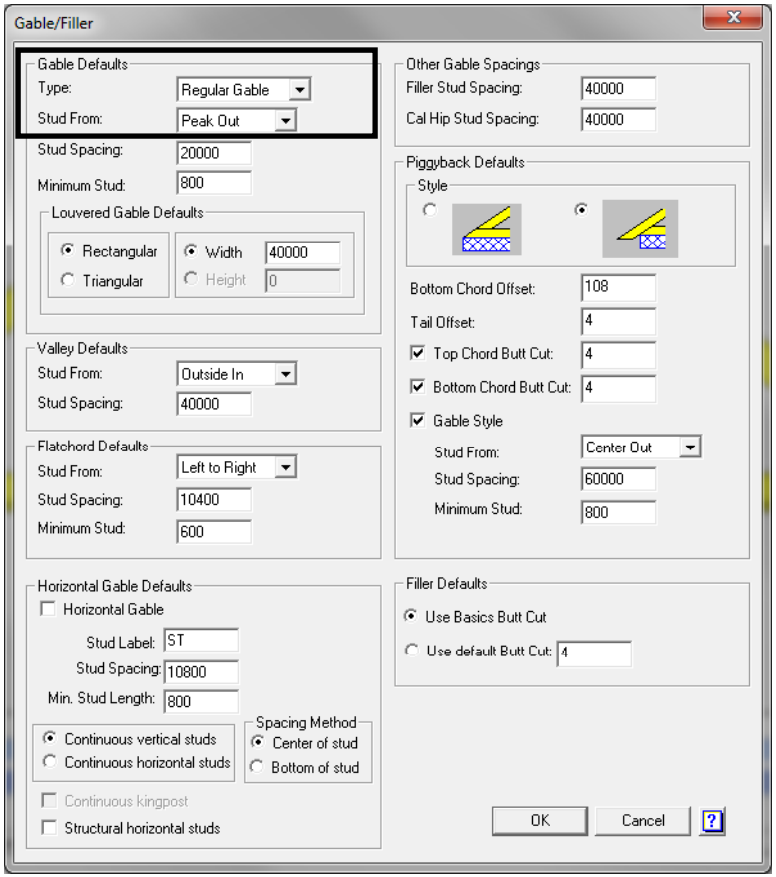
Type: Select from the four available types of gables. The available types are **Regular**, **Structural**, **Louvered** and **Structural Louvered**.

Stud From:

Left to Right – Will stud the gable or valley from left to right disregarding peaks and pitch breaks.

Right to Left – Will stud the gable or valley from right to left disregarding peaks and pitch breaks.

Center Out – Studs the gable or valley from the center of span disregarding peaks and pitch breaks.



Geometry

Gable/Filler (cont)

Stud From (cont):

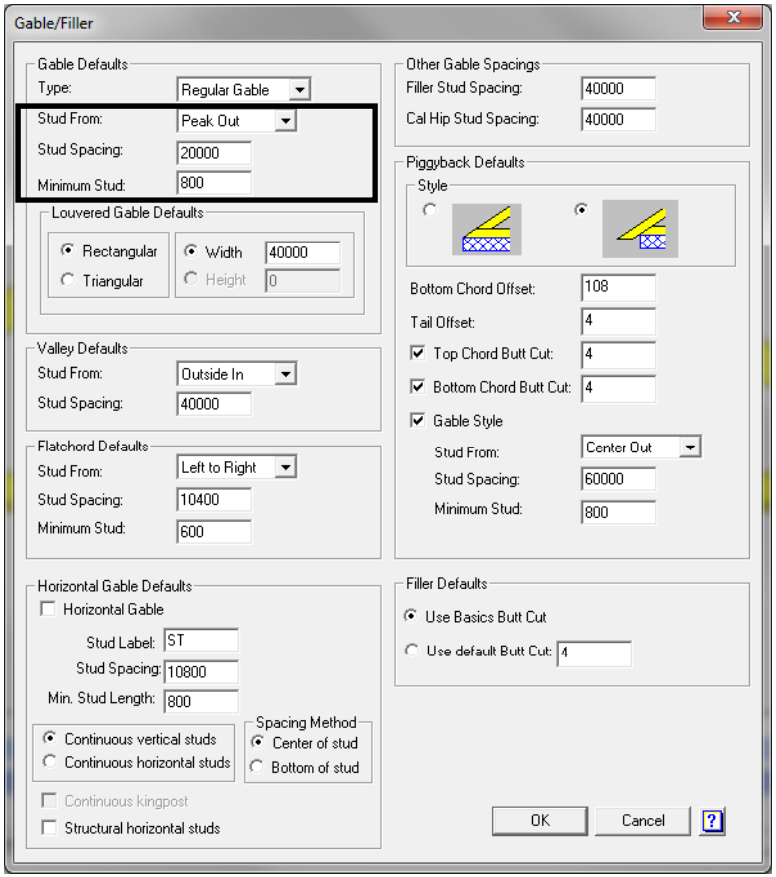
Outside In – Will stud the gable or valley from the ends of the truss to the center disregarding peaks and pitch breaks.

Peak Out – Will stud the gable or valley from the peak disregarding pitch breaks.

Louver Out – Will stud the gable or valley using the left and right louver studs as the spacing starting point. Does not consider peaks and pitch breaks.

Stud Spacing: Enter the default stud spacing for gables only. This dimension may be modified per truss as needed.

Minimum Stud: Specify the shortest piece for cutting. Any stud shorter than the specified dimension will be removed from the truss and not show on cutting.



Geometry

Gable/Filler (cont)

Louvered Gable Defaults:

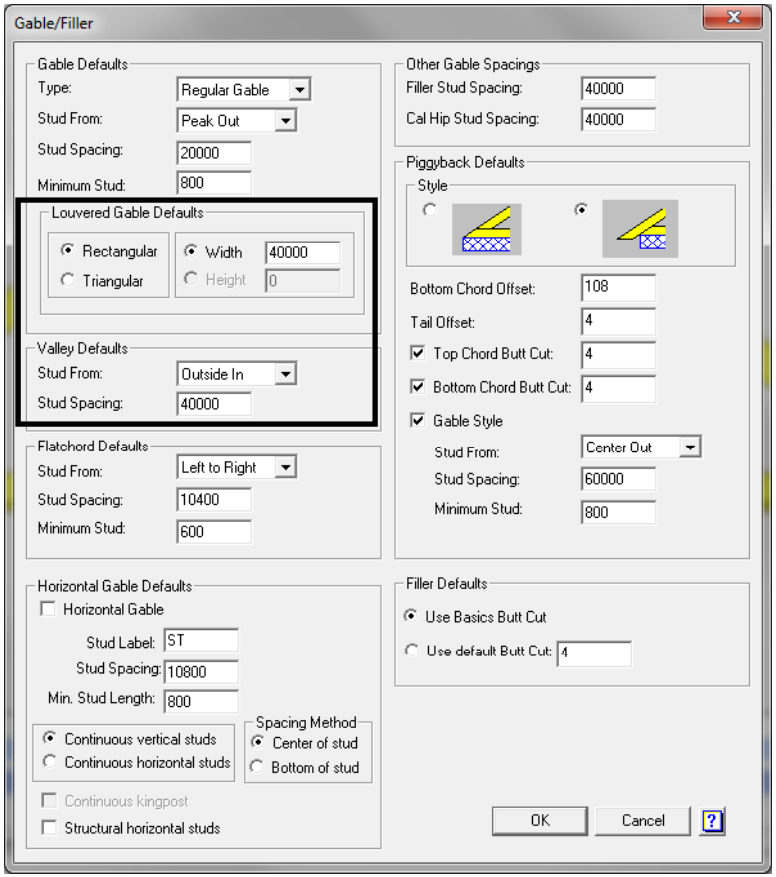
Rectangle – Offers width only. This selection will space the studs at the louver width specified but will not add the horizontal blocking.

Triangle - Offers width and height. This selection will add the horizontal louver base and all studs required.

Valley Defaults:

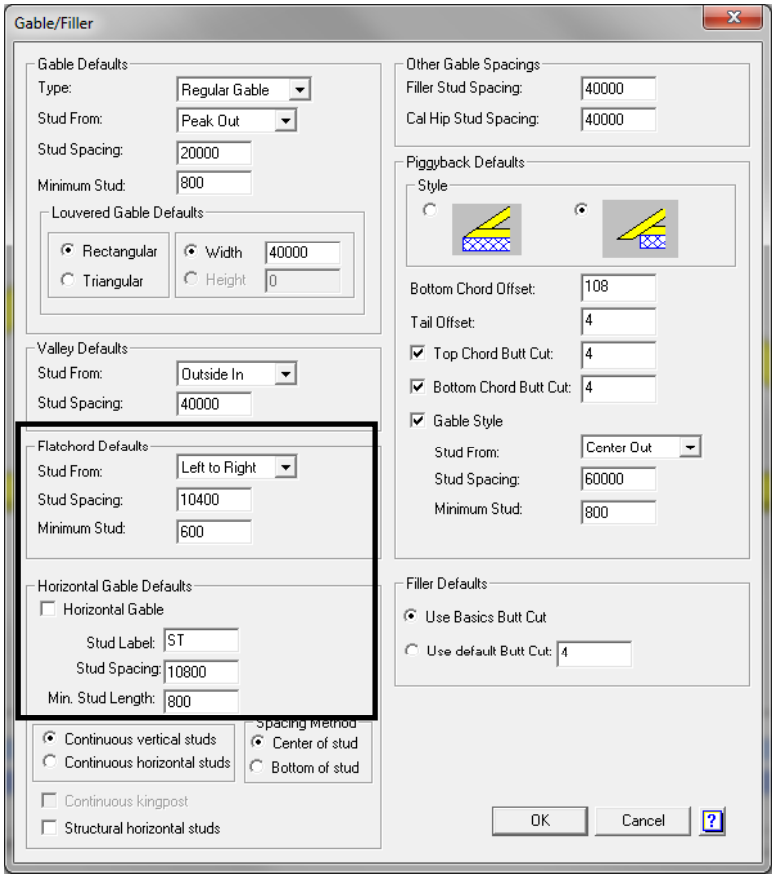
Stud From – Same options as Gables.

Stud Spacing - Enter the default stud spacing for valleys only. This dimension may be modified per truss as needed.



Geometry

Gable/Filler (cont)



Flatchord Defaults:

Stud From – Same options as Gables.

Stud Spacing - Enter the default stud spacing for flatchords only. This dimension may be modified per truss as needed.

Minimum Stud - Specify the shortest piece for cutting. Any stud shorter than the specified dimension will be removed from the truss and not show on cutting.

Horizontal Gable Defaults:

Horizontal Gable – Activates the horizontal gable options.

Stud Label – Specify the stud label name.

Stud Spacing - Enter the default stud spacing for horizontal gable stud only. This dimension may be modified per truss as needed.

Minimum Stud - Specify the shortest piece for cutting. Any stud shorter than the specified dimension will be removed from the truss and not show on cutting.

Geometry

Gable/Filler (cont)

Horizontal Gable Defaults (cont):

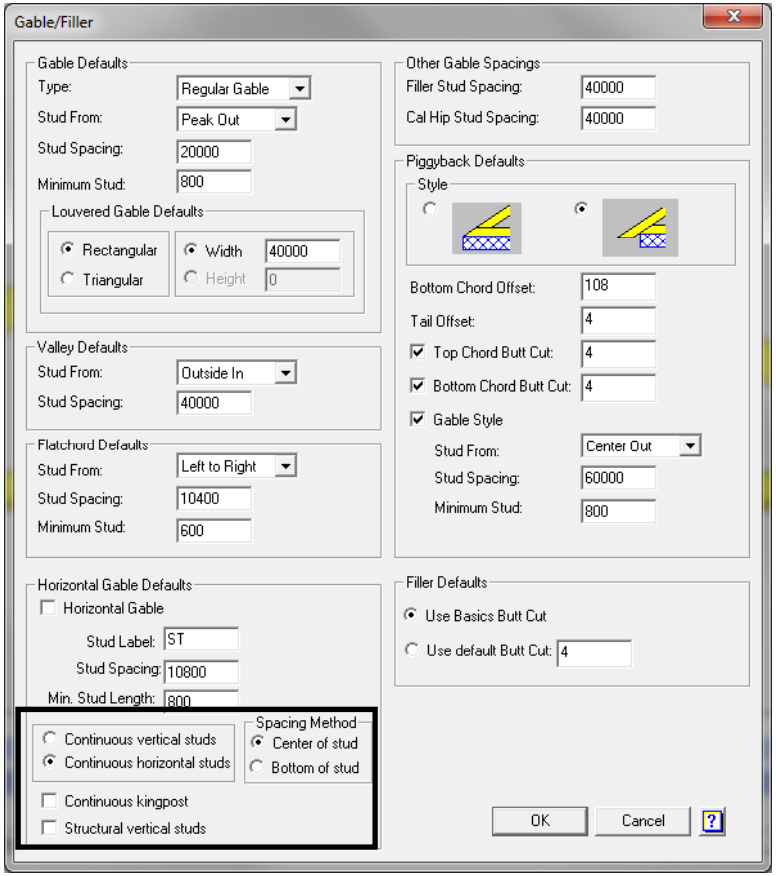
Continuous Vertical Studs – Vertical studs will be continuous with the horizontal studs cut in between the vertical studs.

Continuous Horizontal Studs – Horizontal studs will be continuous with the vertical studs cut in between the horizontal studs.

Spacing Method – Specify the reference location of the spacing dimension with either **Center of Stud** or **Bottom of Stud.**

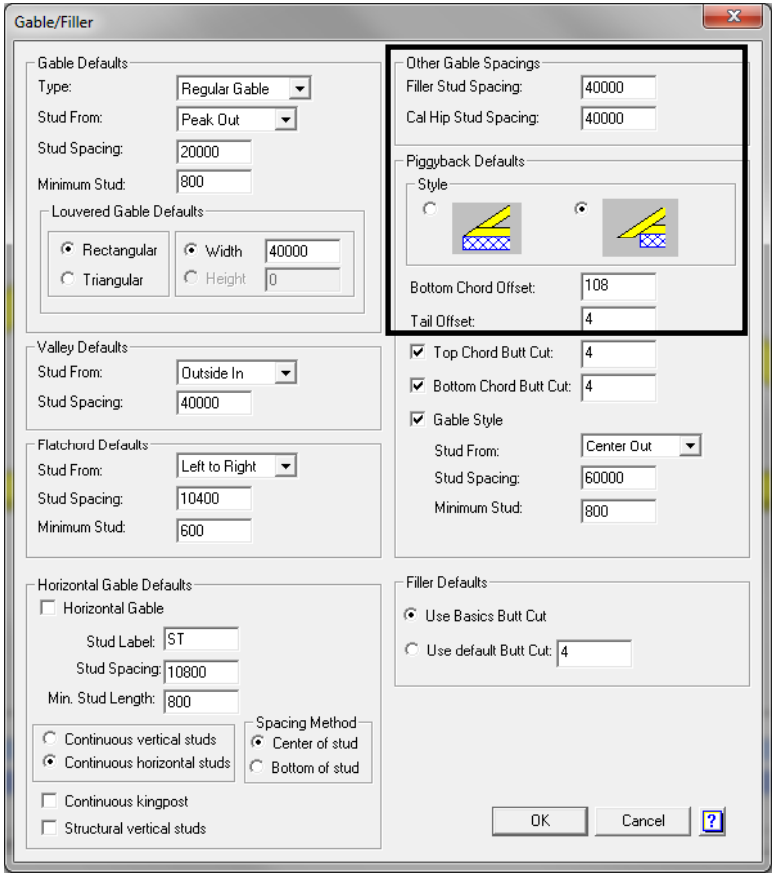
Continuous Kingpost – This option will make only the kingpost continuous.

Structural Vertical Studs – Makes the vertical studs structural.



Geometry

Gable/Filler (cont)



Other Gable Spacings:

Filler Stud Spacing – Enter the default stud spacing for fillers only. This dimension may be modified per truss as needed.

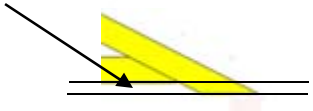
Cal Hip Stud Spacing – Enter the default stud spacing for cal hips only. This dimension may be modified per truss as needed.

Piggyback Details:

Style – Allows the user to select the desired Piggyback end detail. **Now reads from Structure**

Style 1 **Style 2**

Bottom Chord Offset – Controls the raised bottom chord distance.



Tail Offset – Works only with style 2. This option raises the level cut overhang, by the specified amount, to give a clearance between the overhang and the supporting truss

Geometry

Gable/Filler (cont)

Piggyback Details (cont):

Top Chord Butt Cut – Adds a butt cut at the end of the top chord for both piggyback styles.

Bottom Chord Butt Cut - Adds a butt cut to the end of the bottom chord for both piggyback styles.

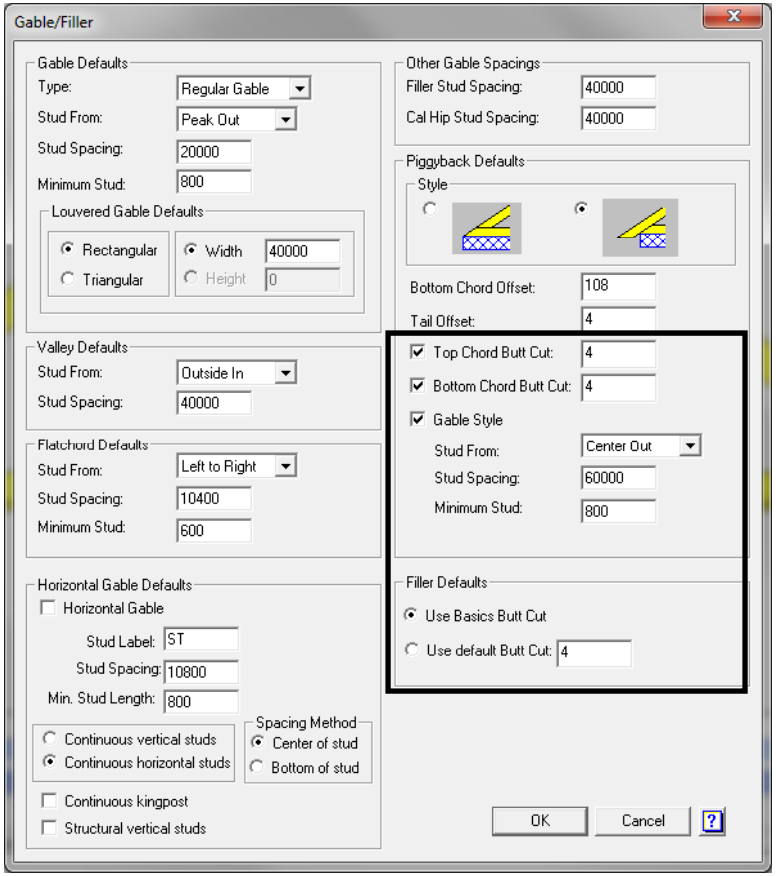
Gable Style – Activates piggyback gable options.

Stud From – Same as Gables but no louvered option.

Stud Spacing - Enter the default stud spacing for piggyback gables only. This dimension may be modified per truss as needed.

Minimum Stud - Specify the shortest piece for cutting. Any stud shorter than the specified dimension will be removed from the truss and not show on cutting.

Filler Defaults: Allows the user to specify a butt cut as a default or to vary with changes to the butt cut dimension in Basics.



Geometry

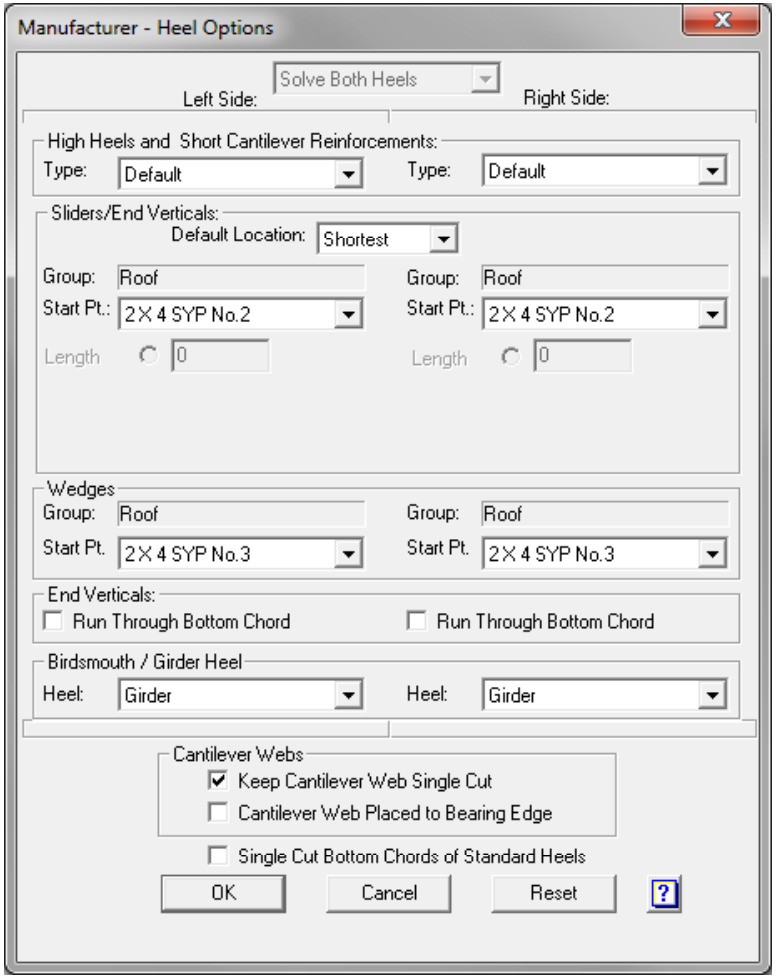
Heel Options

The **Heel Options** dialog box contains the default manufacturer information the program will use when designing heels and cantilever situations. The information in this dialog box will be applied to any new truss or truss job unless changed at that level.

Note: At the Manufacturer level **Solve Both Heels** is disabled. It is assumed heel definitions will be assigned at the individual truss level, not at the manufacturer level.

The available options are;

- Solve Both heels
- Solve Left Heel Only
- Solve Right Heel Only
- Do Not Solve Heels



Geometry

Heel Options (cont)

Heel Types - Refers to Wedges, Top and Bottom Sliders, Top and Bottom Reinforcing Webs, etc., that change the nature of your heel.

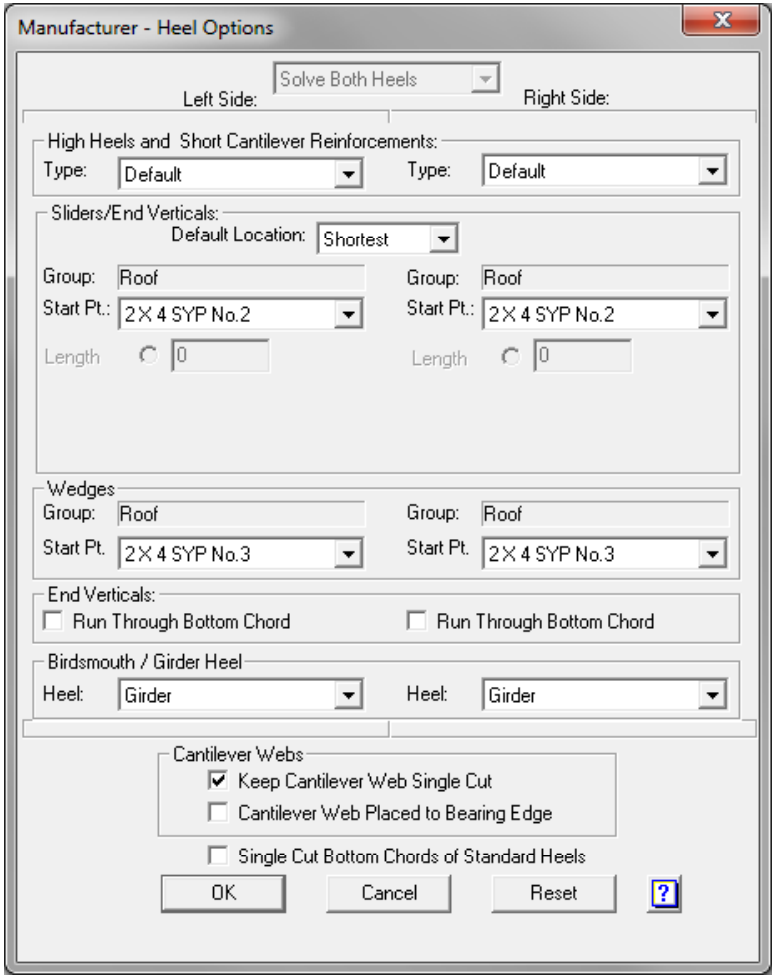
Default Location - This drop-down list box contains three options: **Shortest**, **Top**, and **Bottom**. Specifically, it refers to the diagonal web which accompanies end verticals and reinforcing webs.

Group – The lumber group used for these web members.

Start Pt – The starting point for web material. If the program is allowed to use other material in case of a web failure, the material will be upgraded generally by grade and not size.

Wedges – The previous information applies.

End Verticals – Allows the program to stop the bottom chord at the inside edge of an end vertical and run that vertical down to bearing. This will increase bearing capacity for undersized bearings



Geometry

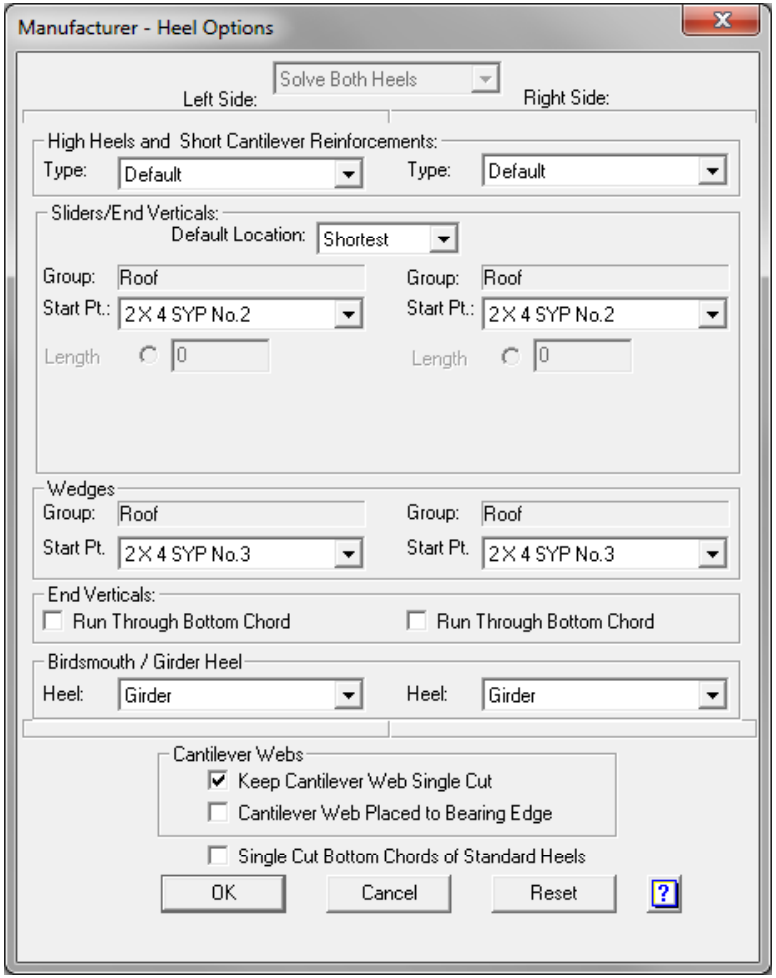
Heel Options (cont)

Keep Cantilever Web Single Cut -Check this box to single cut the cantilever web against the next vertical web. **If not checked**, the cantilever web will be double cut.

Cantilever Web Placed to Bearing Edge - Select this option to place the cantilever web to the outer most edge of the bearing. **If not checked**, the web centerline will be placed in line with the bearing centerline.

Single Cut Bottom Chords of Standard Heels -

When this option is checked, the program will single cut the bottom chord of a truss with standard heels.



Geometry

Preferred Panel Lengths

Preferred Panel Lengths determine panel size. The program will initially web trusses based on this information and will make no panel larger than the dimensions entered.

The dimensions shown here are recommended panel sizes.

From **Setup > Manufacturer > Geometry > Preferred Panel Lengths**:

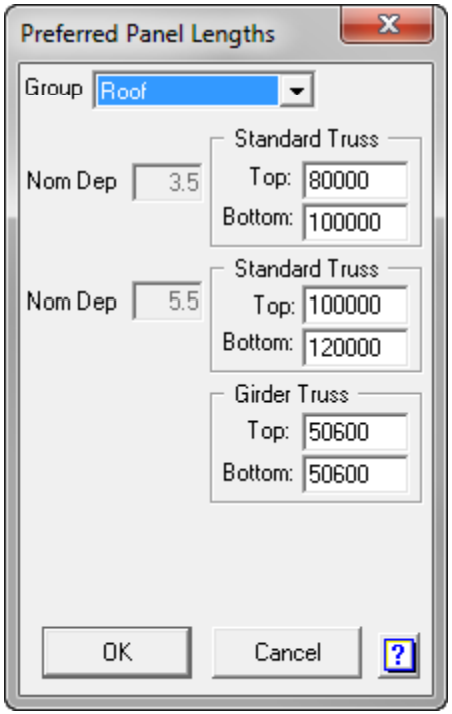
Group – Select any group from the pull down to set panel lengths for that group.

Nom Dep 3.5 – These are the panel lengths for 2X4 top and bottom chords.

Nom Dep 5.5 – These are the panel lengths for 2X6 top and bottom chords.

Girder Truss – The panel lengths for Girders. Smaller panels equals more webs.

NOTE: A truss with 2X6 top chord and 2X4 bottom chord would web using 10’ panels for both and would have Howe type webbing.



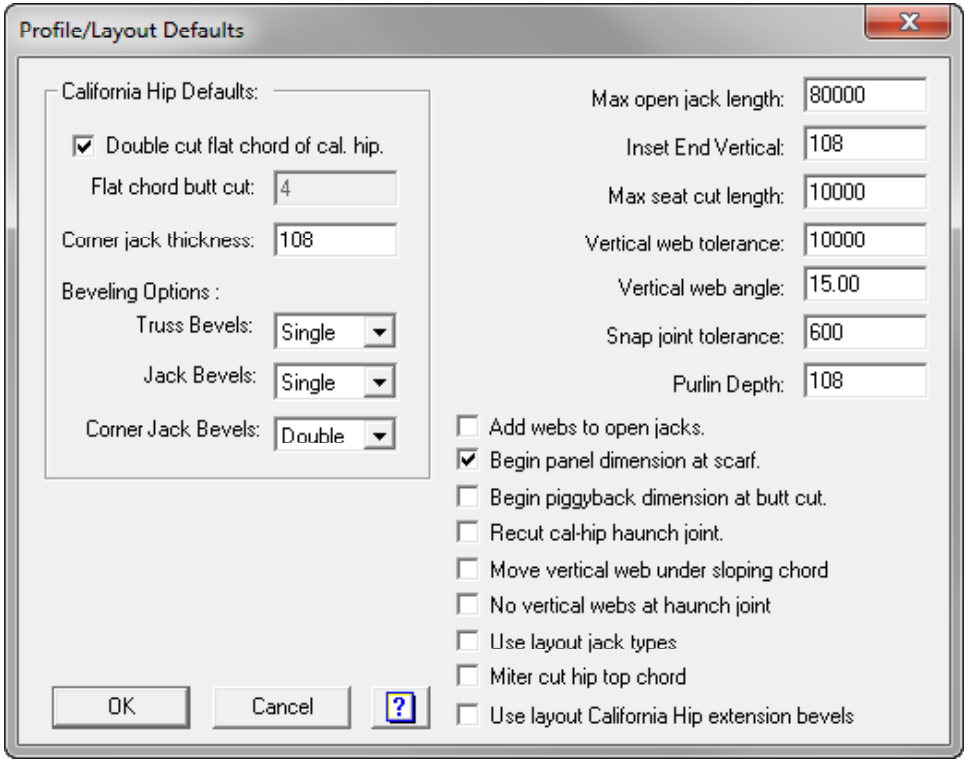
Geometry

Profile / Layout

The **Profile/Layout Defaults** dialog box contains **California Hip Defaults, Beveling Options** and other miscellaneous defaults the program will use when importing layout files into the engineering program.

When fabricating California hips, set the **California Hip Defaults** section to correspond to your fabrication needs.

Profile/Layout also contains **Beveling Options**. Set the defaults for bevels that come in from Layout.


Profile/Layout Defaults
California Hip Defaults:
Double cut flat chord of cal. hip.
Flat chord butt cut: 4
Corner jack thickness: 108
Beveling Options :
Truss Bevels: Single
Jack Bevels: Single
Corner Jack Bevels: Double
Max open jack length: 80000
Inset End Vertical: 108
Max seat cut length: 10000
Vertical web tolerance: 10000
Vertical web angle: 15.00
Snap joint tolerance: 600
Purlin Depth: 108
Add webs to open jacks.
Begin panel dimension at scarf.
Begin piggyback dimension at butt cut.
Recut cal-hip haunch joint.
Move vertical web under sloping chord
No vertical webs at haunch joint
Use layout jack types
Miter cut hip top chord
Use layout California Hip extension bevels
OK
Cancel

Geometry

Profile / Layout (cont)

Double Cut Flat Chord of Cal. Hip – Activates the double cut feature and cuts the flat chord against the bottom edge of the top chord.

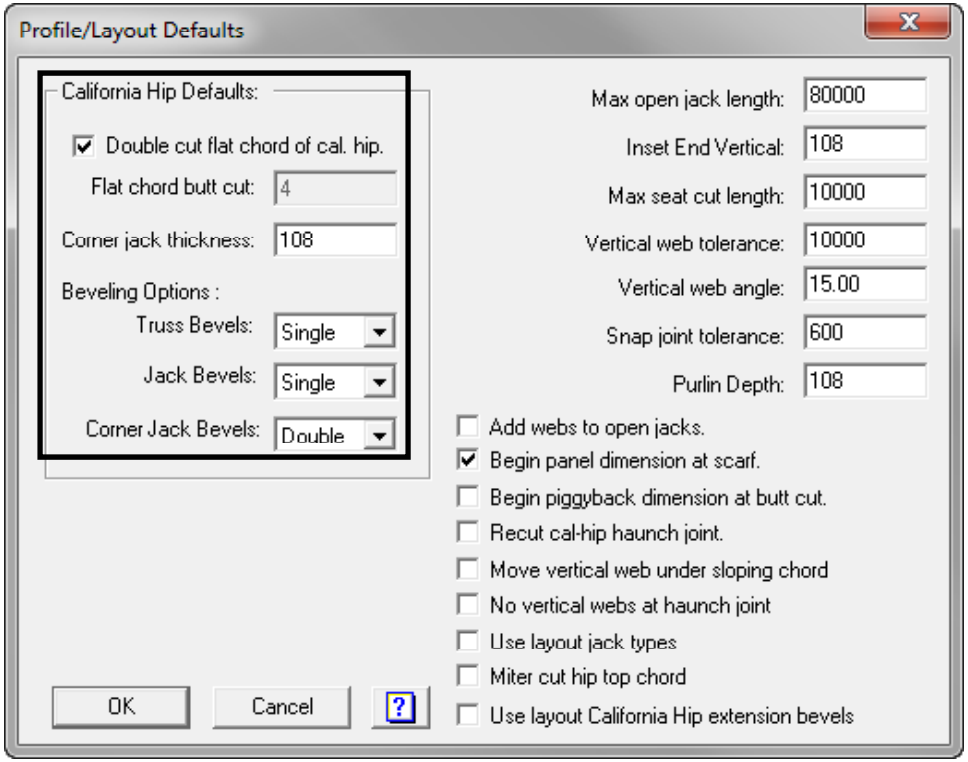
Flat Chord Butt Cut – Uses the input butt cut dimension

Corner Jack Thickness - The thickness of the corner jack material.

Beveling Options - Control how beveling is handled when importing trusses, end jacks and corner jacks from layout.

Available options are;

- None
- Single
- Double
- Ignore


Profile/Layout Defaults
California Hip Defaults:
Double cut flat chord of cal. hip.
Flat chord butt cut: 4
Corner jack thickness: 108
Beveling Options :
Truss Bevels: Single
Jack Bevels: Single
Corner Jack Bevels: Double
Max open jack length: 80000
Inset End Vertical: 108
Max seat cut length: 10000
Vertical web tolerance: 10000
Vertical web angle: 15.00
Snap joint tolerance: 600
Purlin Depth: 108
Add webs to open jacks.
Begin panel dimension at scarf.
Begin piggyback dimension at butt cut.
Recut cal-hip haunch joint.
Move vertical web under sloping chord
No vertical webs at haunch joint
Use layout jack types
Miter cut hip top chord
Use layout California Hip extension bevels
OK
Cancel

Geometry

Profile / Layout (cont)

Max Open Jack Length – The largest jack span before adding an end vertical.

Inset End Vertical – The distance to hold back the jack end vertical.

Max Seat cut Length – The longest seat cut allowed before the program converts the seat cut to an additional flat bottom chord.

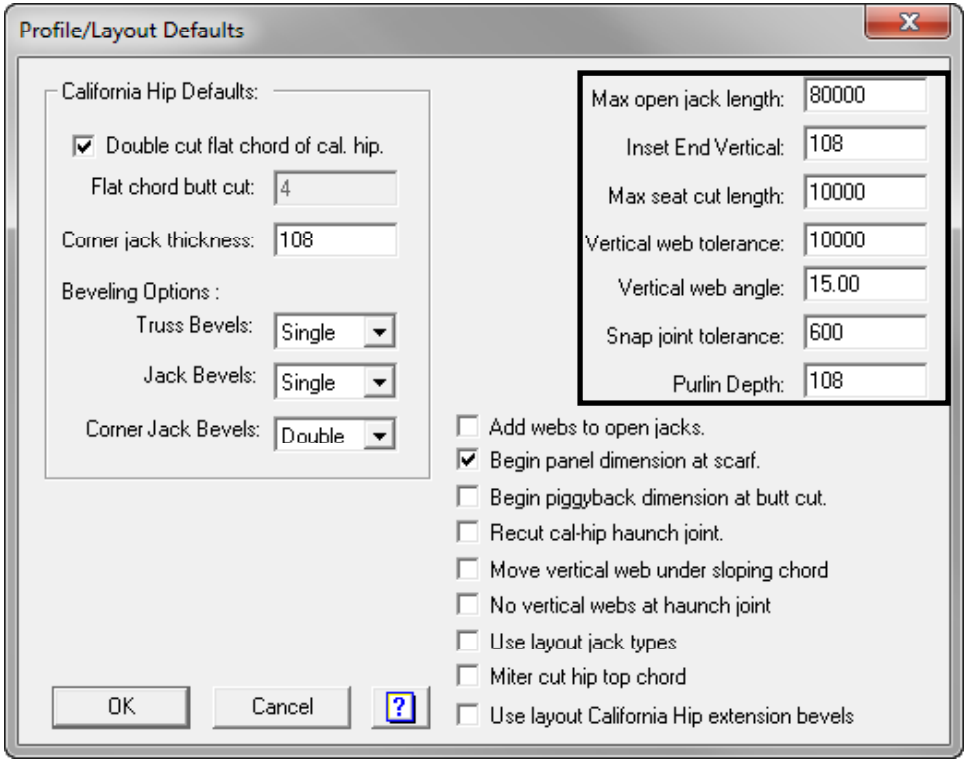
Vertical web tolerance – Specifies the shortest allowable vertical web

Vertical Web Angle – Any web added to a truss, at a 15 degree angle or less, will be made vertical.

Snap Joint Tolerance – When a web is within the specified amount, the program will snap the web to a preferred panel length.

Purlin Depth – Specifies the orientation of purlins.

Flat = 108
On edge = 308


Profile/Layout Defaults
California Hip Defaults:
Double cut flat chord of cal. hip.
Flat chord butt cut: 4
Corner jack thickness: 108
Beveling Options :
Truss Bevels: Single
Jack Bevels: Single
Corner Jack Bevels: Double
Max open jack length: 80000
Inset End Vertical: 108
Max seat cut length: 10000
Vertical web tolerance: 10000
Vertical web angle: 15.00
Snap joint tolerance: 600
Purlin Depth: 108
Add webs to open jacks.
Begin panel dimension at scarf.
Begin piggyback dimension at butt cut.
Recut cal-hip haunch joint.
Move vertical web under sloping chord
No vertical webs at haunch joint
Use layout jack types
Miter cut hip top chord
Use layout California Hip extension bevels
OK
Cancel

Geometry

Profile / Layout (cont)

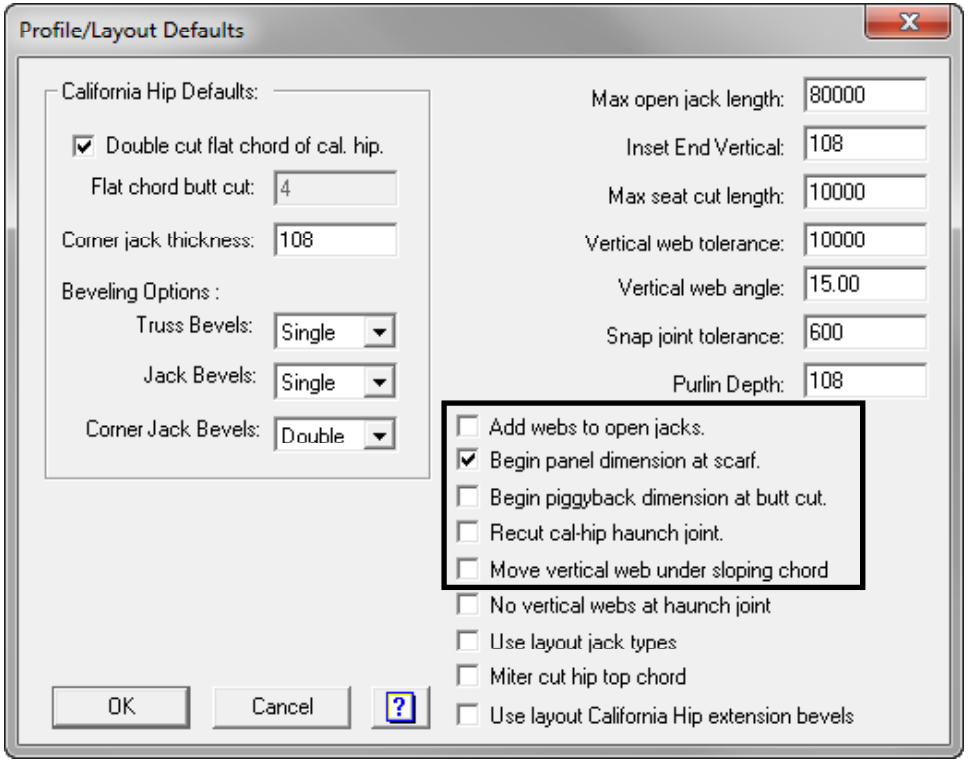
Add webs to open jacks – Automatically adds a web to all open jacks.

Begin panel dimensions at scarf – Panel dimensions will begin at the top end of the scarf where the top and bottom chords separate. This box is checked by default

Begin piggyback dimension at butt cut – When a piggyback top chord has a butt cut, the piggyback span will be measured from the butt cut and not the flat chord of the base truss.

Re-cut cal-hip haunch joint – Double cuts the flat chord at the cal-hip haunch joint.

Move vertical web under sloping chord – Verticals, by default, fall under the flat chord. This option will shift the web completely under the sloping chord.


Profile/Layout Defaults
California Hip Defaults:
Double cut flat chord of cal. hip.
Flat chord butt cut: 4
Corner jack thickness: 108
Beveling Options :
Truss Bevels: Single
Jack Bevels: Single
Corner Jack Bevels: Double
Max open jack length: 80000
Inset End Vertical: 108
Max seat cut length: 10000
Vertical web tolerance: 10000
Vertical web angle: 15.00
Snap joint tolerance: 600
Purlin Depth: 108
Add webs to open jacks.
Begin panel dimension at scarf.
Begin piggyback dimension at butt cut.
Recut cal-hip haunch joint.
Move vertical web under sloping chord
No vertical webs at haunch joint
Use layout jack types
Miter cut hip top chord
Use layout California Hip extension bevels
OK
Cancel

Geometry

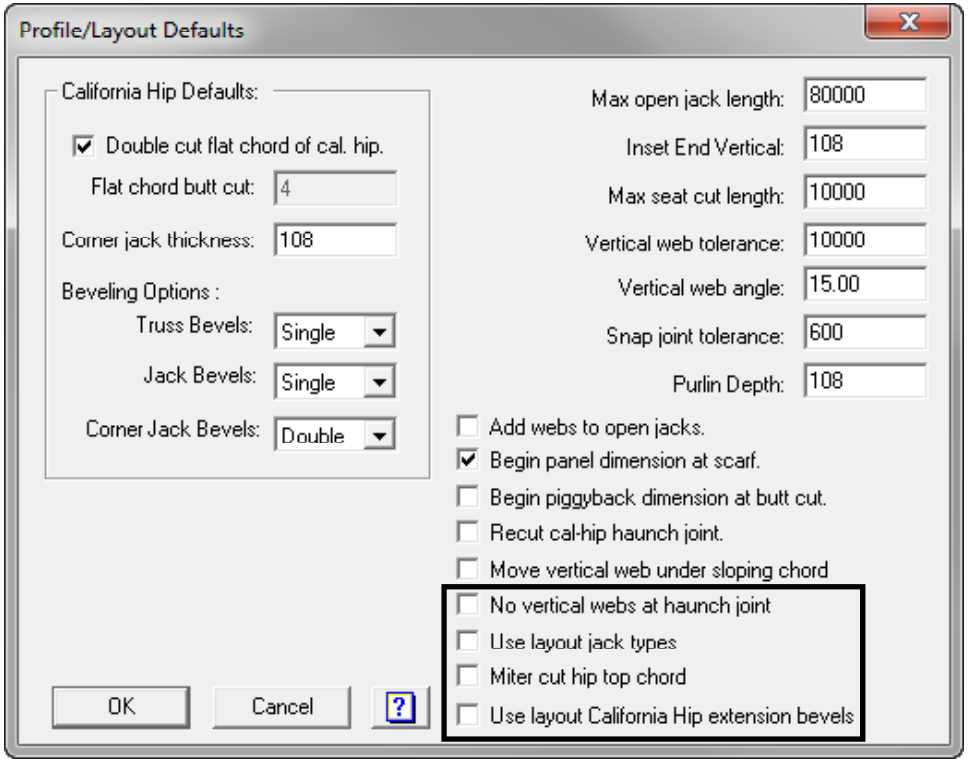
Profile / Layout (cont)

No vertical webs at haunch joint – This option will eliminate verticals at the haunch joint and only use diagonal webs.

Use layout jack types – Disregard engineering defaults and retain jacks from layout.

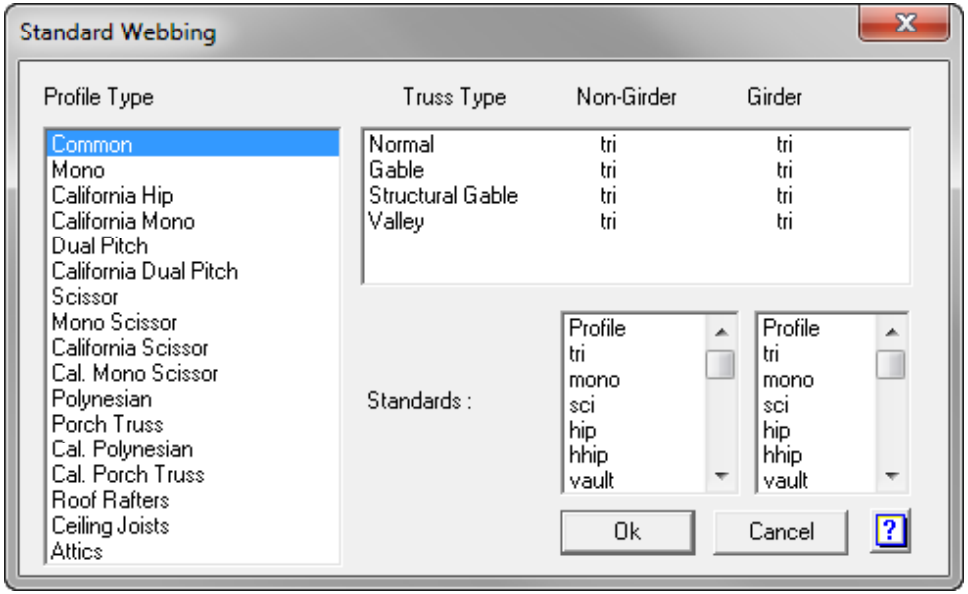
Miter cut hip top chord joints – This option will alter the cuts where the flat top chord and the sloping chord come together. The cut angles will be the same length.

Use layout California Hip extension bevels – Disregard engineering defaults and retain bevels from layout.


Profile/Layout Defaults
California Hip Defaults:
Double cut flat chord of cal. hip.
Flat chord butt cut: 4
Corner jack thickness: 108
Beveling Options :
Truss Bevels: Single
Jack Bevels: Single
Corner Jack Bevels: Double
Max open jack length: 80000
Inset End Vertical: 108
Max seat cut length: 10000
Vertical web tolerance: 10000
Vertical web angle: 15.00
Snap joint tolerance: 600
Purlin Depth: 108
Add webs to open jacks.
Begin panel dimension at scarf.
Begin piggyback dimension at butt cut.
Recut cal-hip haunch joint.
Move vertical web under sloping chord
No vertical webs at haunch joint
Use layout jack types
Miter cut hip top chord
Use layout California Hip extension bevels
OK
Cancel

Geometry

Shapes Before Profile



Use this dialog window to preset how trusses are to be created in Engineering.

Profile Type – These are profile types that, when selected, allow the user to specify which Truss Type information is to be used and the method of import.

NOTE: These are programmed and cannot be edited by the user.

Truss Type – When a Profile Type is highlighted the Truss Type information becomes available. Highlight the Truss Type option and, from the Standards List, select the method of import.

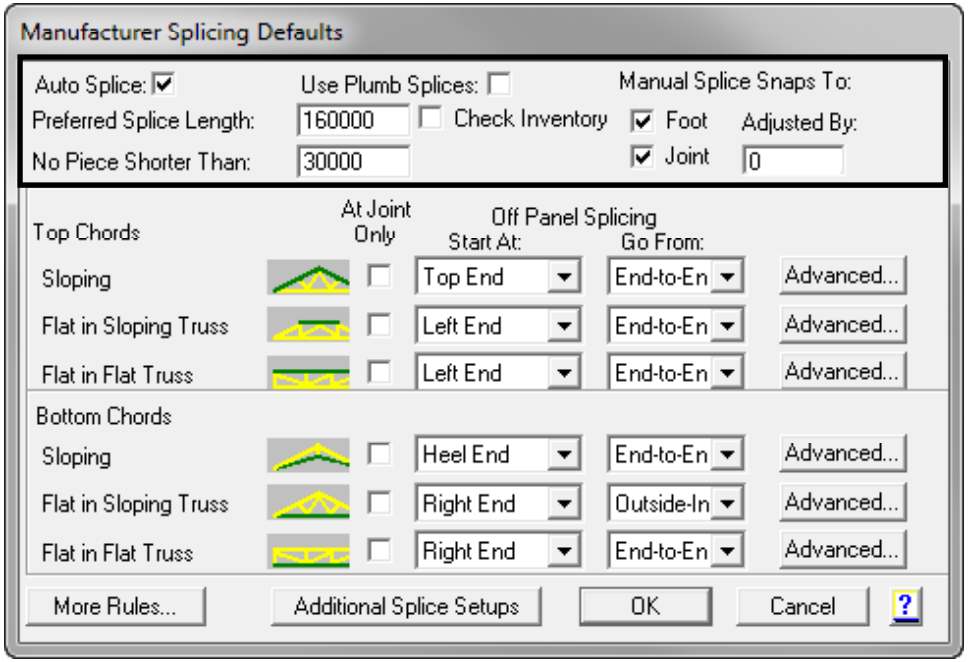
NOTE: These are programmed and cannot be edited by the user.

Standards – The options available for the creation of Non-Girder and Girder trusses are;

- **Profile –** Tells the program to let Profile create the truss.
- **All Others –** All other options are Shape files and tell the program to use that specific Shape to create the truss.

Geometry

Splicing



The splicing module allows for total control over splice locations in automatic or manual splicing mode.

Auto Splice: When checked, the program will automatically apply the splice settings.

Use Plumb Splices: Converts the usual square cut splice to a plumb cut splice. Splice plates are larger using plumb splices.

Preferred Splice Length: This is the long splice length to be used for all trusses.
(Splices may be altered at any time)

No Piece Shorter Than: Controls short splice length. When the program splices, using the Preferred Splice Length, any piece **Shorter Than** the dimension shown will cause splicing to adjust.
EX: An 18’ top chord will splice at 16’ and 2’. Splicing will adjust the long splice piece to 14’, the next nominal length, and make the short piece 4’.

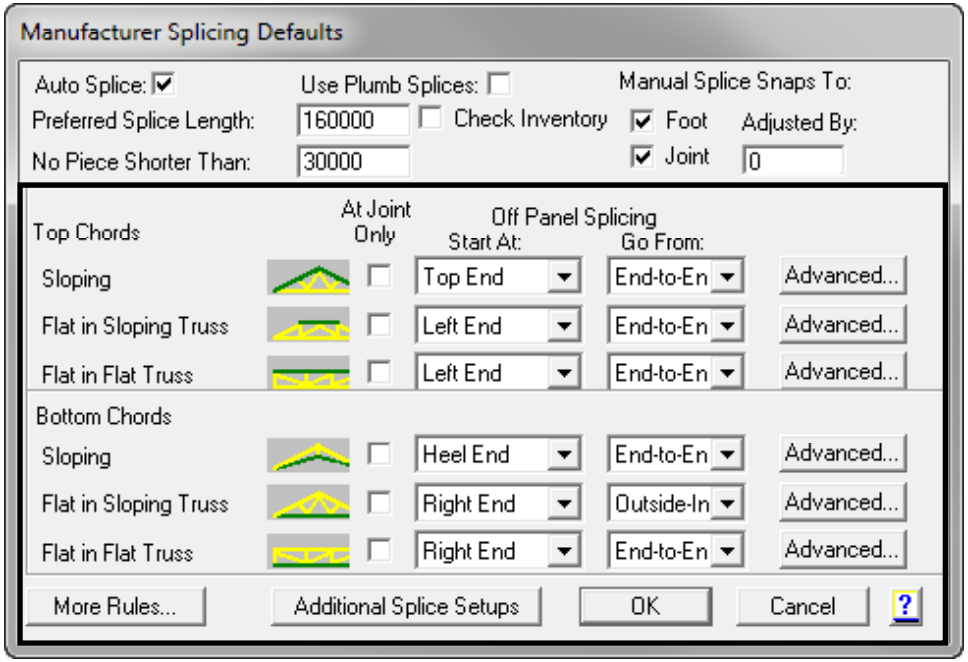
Check Inventory: When checked, will change Preferred Splice Length to maximum available inventory length.

Manual Splice Snaps To:

Foot – Snaps to the nearest foot, odd or even
Joint – Will snap to the nearest joint
Adjust By – Used to adjust the nominal length of stocked material.
(EX: Entering a -8 will shorten the spliced chords by ½”**)**.

Geometry

Splicing (cont)



The main section of the Splicing dialog window is broken into two parts, Top Chords and Bottom Chords.

Top Chords will be discussed. All Top Chord information applies to Bottom Chords as well

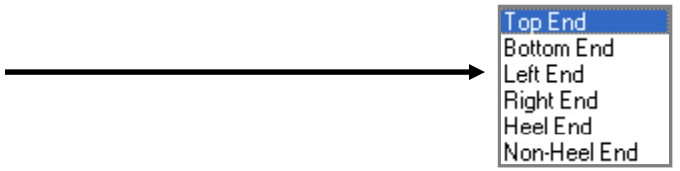
Column One: lists the chord categories for spliced.

Column Two: will only joint splice each splice type selected.

NOTE: Checking the **At Joint Only** box Will gray out the **Advanced** button

Off Panel Splicing:

Start At – Where the splice dimension will be measured from



Go From – Only one option is available per chord type

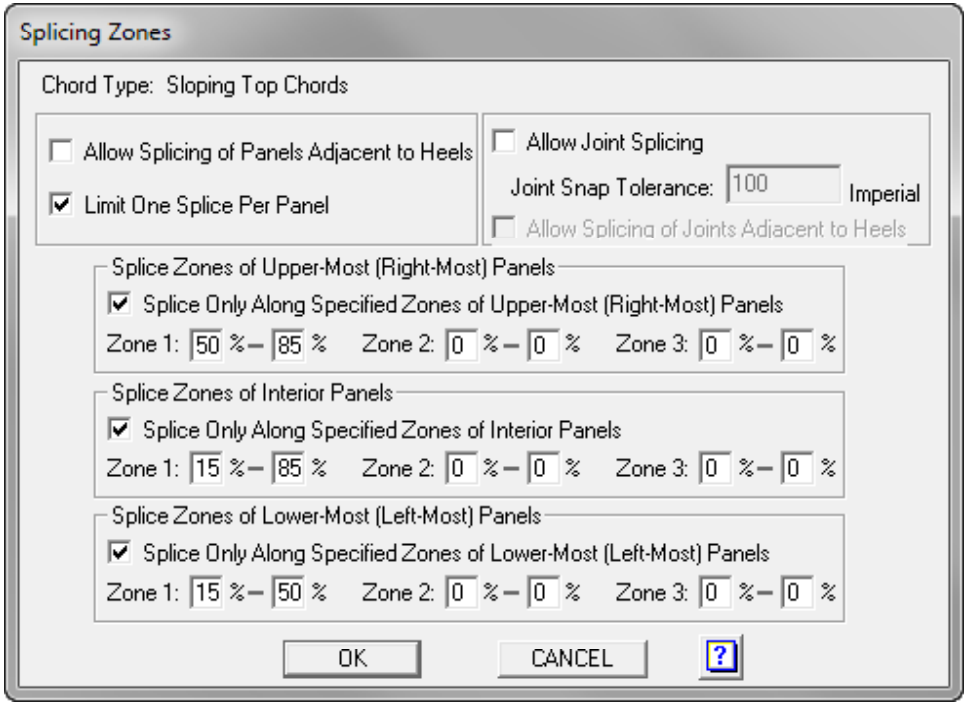
Geometry

Splicing - Advanced

The **Advanced** button offers even greater control over splicing by allowing the user to select splice parameters for various truss types.

Each Chord type has an **Advanced** section; the options are identical, and are applied to the chord type chosen, which appears at the top of the screen in the **Chord Type** field.

Allow Splicing of Panels Adjacent to Heels, **Limit One Splice Per Panel** and **Allow Joint Splicing** are self explanatory.


Splicing Zones
Chord Type: Sloping Top Chords
Allow Splicing of Panels Adjacent to Heels
Limit One Splice Per Panel
Allow Joint Splicing
Joint Snap Tolerance: 100 Imperial
Allow Splicing of Joints Adjacent to Heels
Splice Zones of Upper-Most (Right-Most) Panels
Splice Only Along Specified Zones of Upper-Most (Right-Most) Panels
Zone 1: 50 % – 85 % Zone 2: 0 % – 0 % Zone 3: 0 % – 0 %
Splice Zones of Interior Panels
Splice Only Along Specified Zones of Interior Panels
Zone 1: 15 % – 85 % Zone 2: 0 % – 0 % Zone 3: 0 % – 0 %
Splice Zones of Lower-Most (Left-Most) Panels
Splice Only Along Specified Zones of Lower-Most (Left-Most) Panels
Zone 1: 15 % – 50 % Zone 2: 0 % – 0 % Zone 3: 0 % – 0 %
OK
CANCEL

NOTE: Splicing in the panel adjacent to heels is not recommended

SPLICING ZONES: For splicing purposes, each chord is divided into zones--Upper-Most (Right-Most) Panels, Interior panels and Lower-Most (Left-Most) Panels. Splicing zones tell the program where and on what part of the chord splices are allowed. The Engineering program splices on a chord-to-chord basis, unlike previous global splicing schemes. As stated earlier, this method offers tremendous flexibility of splice locations and methods.

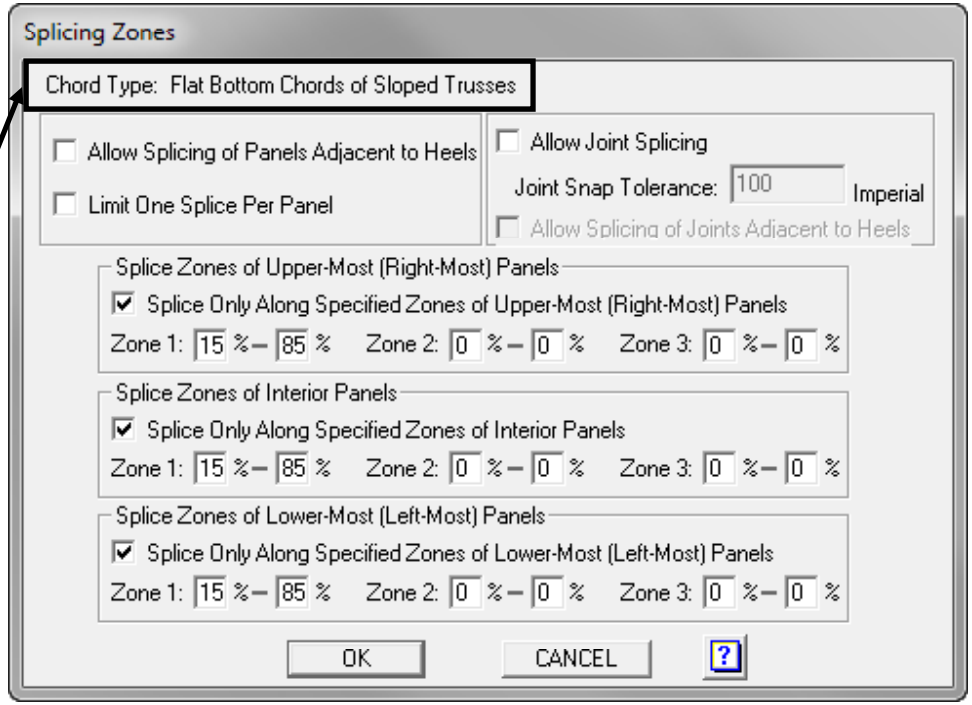
Geometry

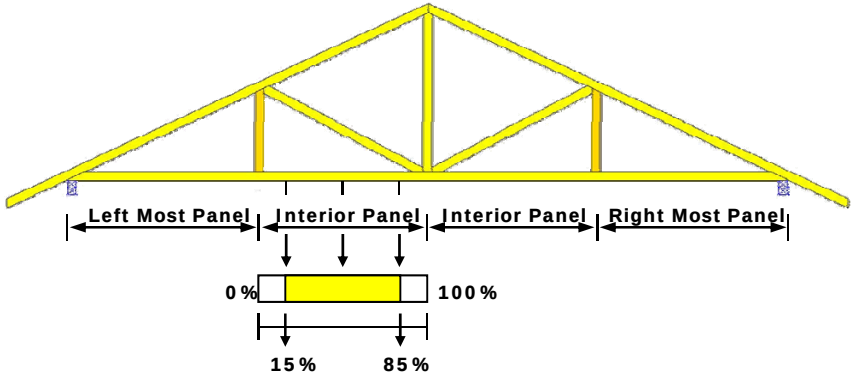
Splicing - Advanced (cont)

Note the top of the dialog box reflects which chord type has been selected, in this example **Flat Bottom Chords of Sloped Truss**. Consider the following example of this chord type.

In the **Splicing Zones** dialog box for bottom chord splicing zones, note that for interior chords there is a zone range of 15% to 85% for zone 1. As shown in the above truss figure, this will allow the program to splice anywhere from 15 to 85% of the panel length, or anywhere in the shaded area. Since we have selected a wide range like this, it is not necessary to specify percentages in the zone 2 and zone 3 fields for interior panels.

NOTE: The splicing zones for the left most and right most panels will be ignored if the **Allow Splicing of Panels Adjacent to Heels** check box is NOT selected.


Splicing Zones
Chord Type: Flat Bottom Chords of Sloped Trusses
Allow Splicing of Panels Adjacent to Heels
Limit One Splice Per Panel
Allow Joint Splicing
Joint Snap Tolerance: 100 Imperial
Allow Splicing of Joints Adjacent to Heels
Splice Zones of Upper-Most (Right-Most) Panels
Splice Only Along Specified Zones of Upper-Most (Right-Most) Panels
Zone 1: 15 % – 85 % Zone 2: 0 % – 0 % Zone 3: 0 % – 0 %
Splice Zones of Interior Panels
Splice Only Along Specified Zones of Interior Panels
Zone 1: 15 % – 85 % Zone 2: 0 % – 0 % Zone 3: 0 % – 0 %
Splice Zones of Lower-Most (Left-Most) Panels
Splice Only Along Specified Zones of Lower-Most (Left-Most) Panels
Zone 1: 15 % – 85 % Zone 2: 0 % – 0 % Zone 3: 0 % – 0 %
OK
CANCEL



Geometry

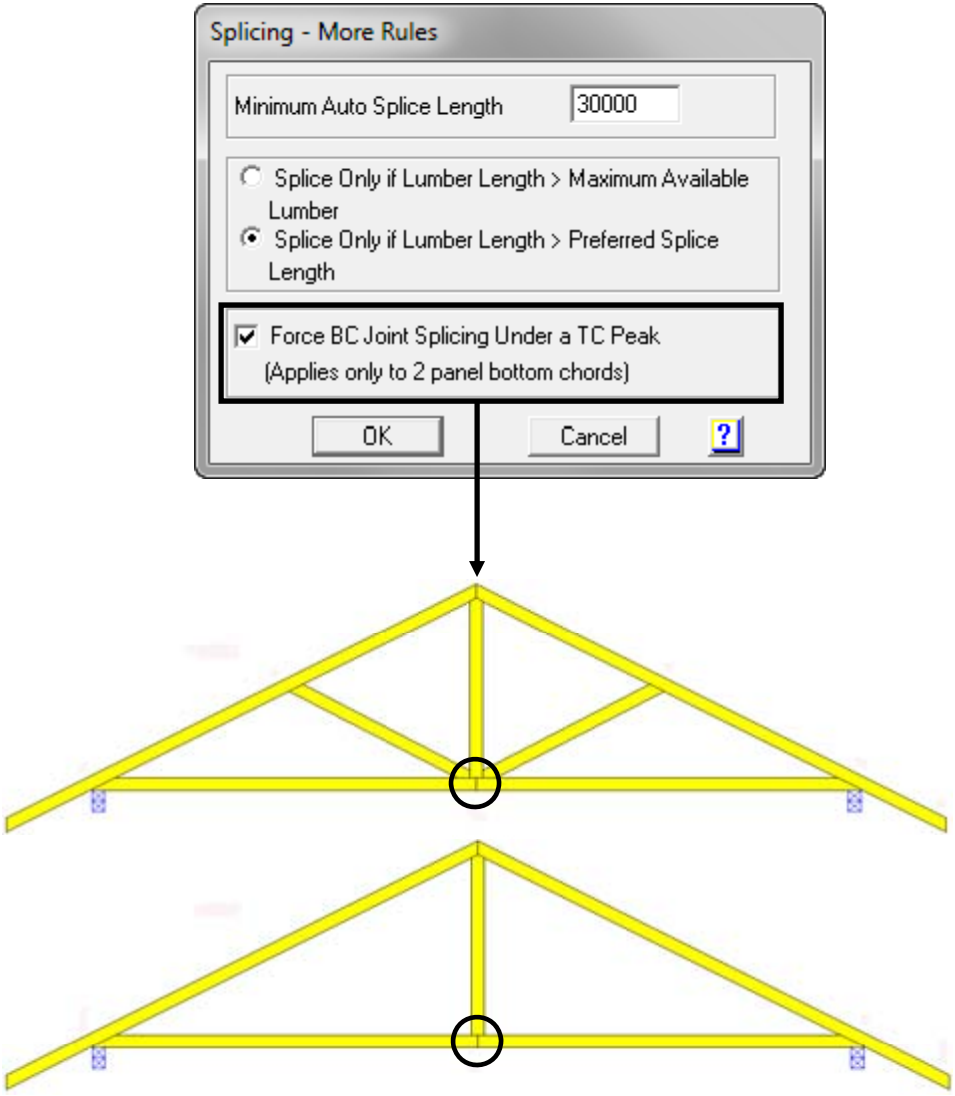
Splicing - More Rules

Minimum Auto Splice Length: The same dimension as the **No Piece Shorter Than** on the main splicing window. This may be modified if needed.

Splice Only if Lumber Length > Maximum Available Lumber: Allows the program to splice using the longest available length for each size, grade and species of lumber.

Splice Only if Lumber Length > Preferred Splice Length: Splices using the Preferred Splice Length as set on the main splicing window

Force BC Joint splice Under a TC Peak (Applies only to 2 panel bottom chords): This option forces the splice under the top chord peak to prevent a splice from falling in the first panel of the truss. There are two basic web patterns affected by this setting.

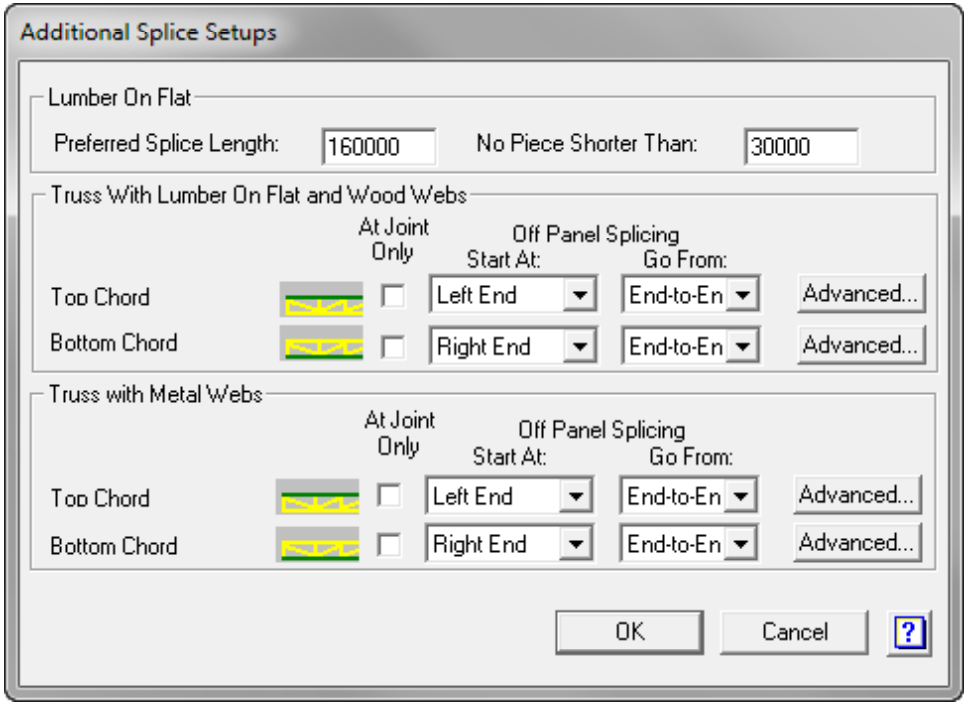

Splicing - More Rules
Minimum Auto Splice Length
30000
Splice Only if Lumber Length > Maximum Available Lumber
Splice Only if Lumber Length > Preferred Splice Length
Force BC Joint Splicing Under a TC Peak
(Applies only to 2 panel bottom chords)
OK
Cancel
?

Geometry

Splicing - Additional Splicing Setups

The **Additional Splice Setups** dialog allows for better control of splice lengths for wood and metal web floor trusses.

These setup options are the same as were discussed on the main splicing window.



Master/Variant

Set Relationships

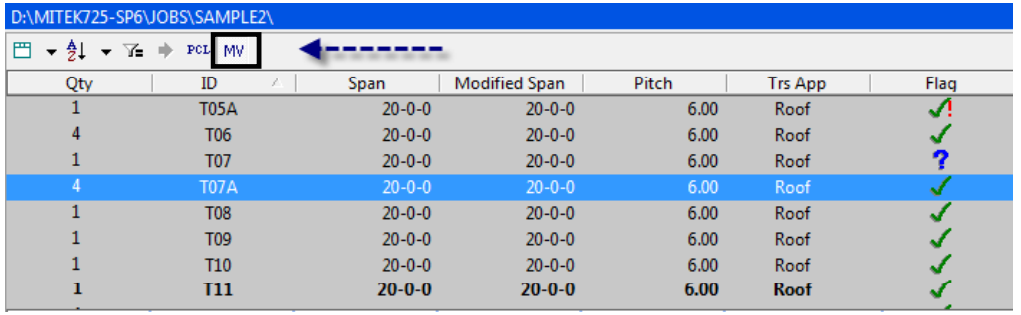
The **Master/Variant** tool allows designers to simplify their truss designs by aligning webs and splices. This will reduce setups for cutting and fabrication stations.

Before using the **Master/Variant** tool, the function must be activated in the MiTek Engineering program, click the Master/Variant Button **(MV)** at the top of the truss list window.

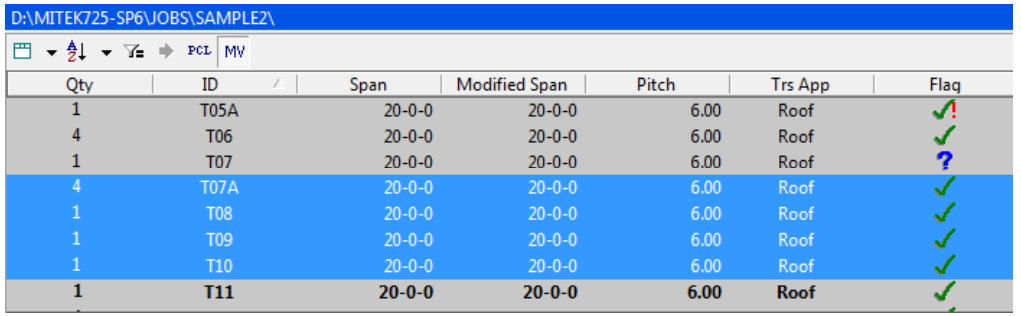
When Master/Variant is active, the entire truss list window is highlighted.

After activating **Master Variant**, select the **variant** trusses by clicking the truss or a group of trusses.

When selecting all variants, use **Shift+Click** to select a block of trusses or **Ctrl+Click** to select random trusses



Qty	ID	Span	Modified Span	Pitch	Trs App	Flag
1	T05A	20-0-0	20-0-0	6.00	Roof	✓!
4	T06	20-0-0	20-0-0	6.00	Roof	✓
1	T07	20-0-0	20-0-0	6.00	Roof	?
4	T07A	20-0-0	20-0-0	6.00	Roof	✓
1	T08	20-0-0	20-0-0	6.00	Roof	✓
1	T09	20-0-0	20-0-0	6.00	Roof	✓
1	T10	20-0-0	20-0-0	6.00	Roof	✓
1	**T11**	**20-0-0**	**20-0-0**	**6.00**	**Roof**	✓



Qty	ID	Span	Modified Span	Pitch	Trs App	Flag
1	T05A	20-0-0	20-0-0	6.00	Roof	✓!
4	T06	20-0-0	20-0-0	6.00	Roof	✓
1	T07	20-0-0	20-0-0	6.00	Roof	?
4	T07A	20-0-0	20-0-0	6.00	Roof	✓
1	T08	20-0-0	20-0-0	6.00	Roof	✓
1	T09	20-0-0	20-0-0	6.00	Roof	✓
1	T10	20-0-0	20-0-0	6.00	Roof	✓
1	**T11**	**20-0-0**	**20-0-0**	**6.00**	**Roof**	✓

Master/Variant

Set Relationships (cont)

After the variant trusses have been highlighted,

Right click within the **Truss List Window**.

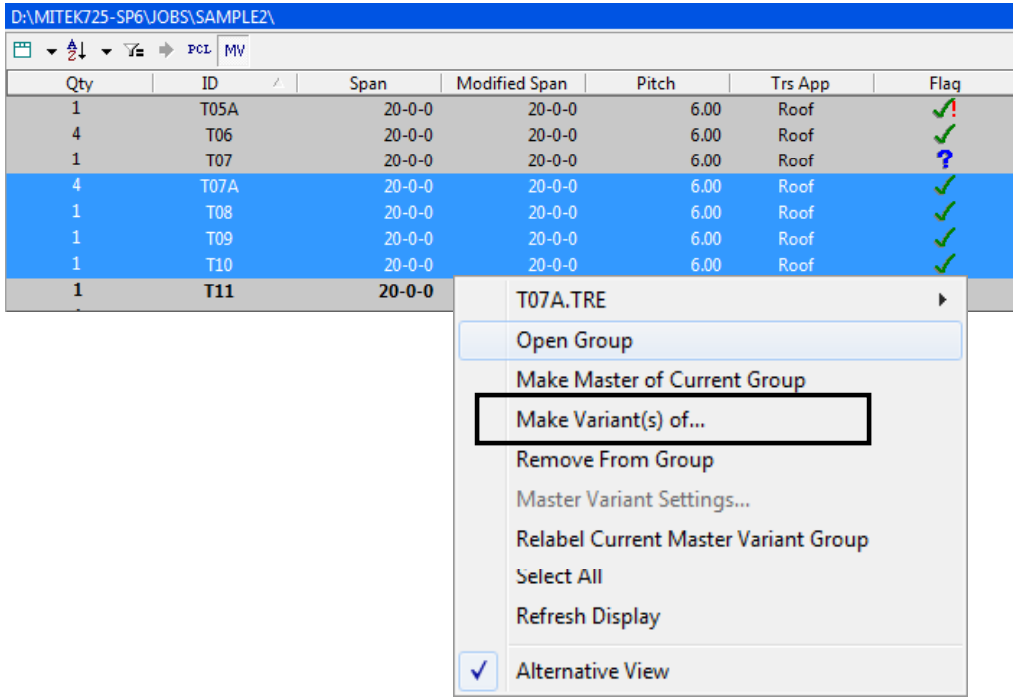
Select **Make Variant(s) of…** from the context menu.

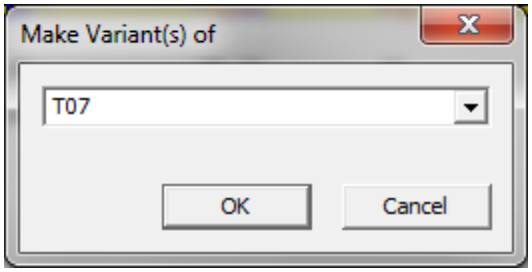
The **Make Variant(s) of** dialog window will open.

Enter the label of, or select from the pull down list, the **Master** truss.

Click **OK**

For this example, **T07A, T08, T09 and T10** were made variants of the **T07** master truss





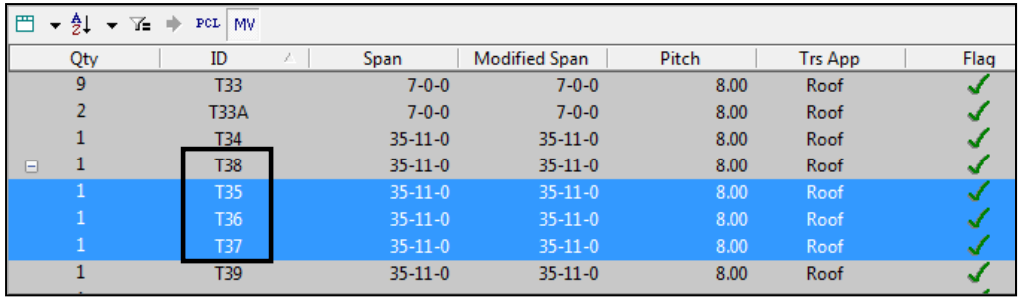
Master/Variant

Set Relationships (cont)

After clicking **OK** to the **Make Variant(s) of…** window,

Trusses **T07A, T08, T09 and T10** have been moved into a group below master truss **T07**.

After all Master/Variant relationships have been made, the designer can begin lining up **Points, Webs** and **Splices.**



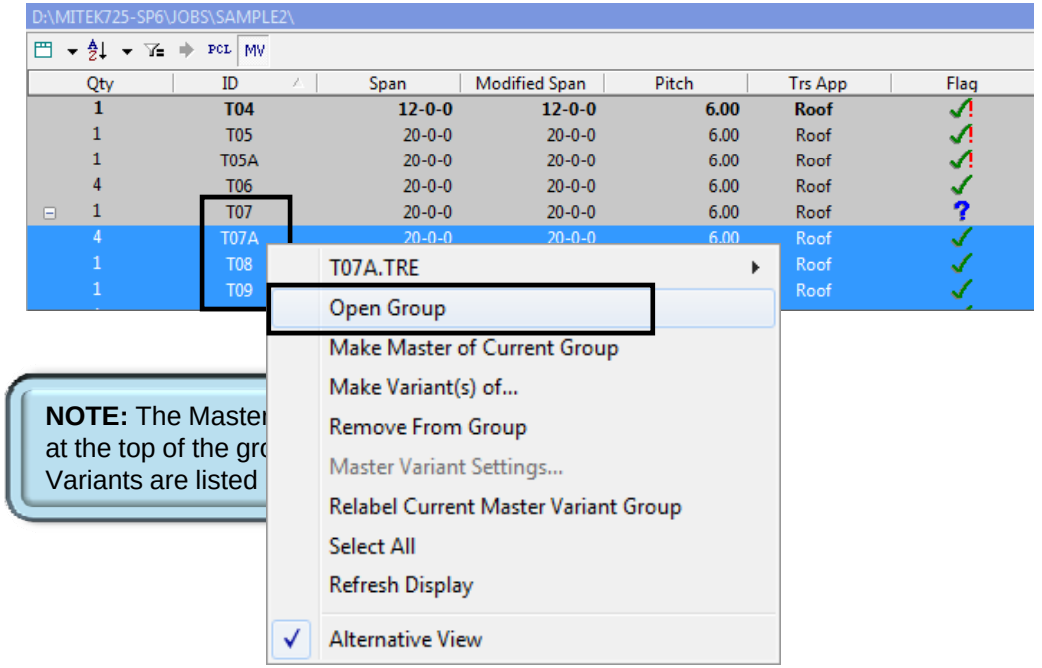
Qty	ID	Span	Modified Span	Pitch	Trs App	Flag
9	T33	7-0-0	7-0-0	8.00	Roof	✓
2	T33A	7-0-0	7-0-0	8.00	Roof	✓
1	T34	35-11-0	35-11-0	8.00	Roof	✓
1	T38	35-11-0	35-11-0	8.00	Roof	✓
1	T35	35-11-0	35-11-0	8.00	Roof	✓
1	T36	35-11-0	35-11-0	8.00	Roof	✓
1	T37	35-11-0	35-11-0	8.00	Roof	✓
1	T39	35-11-0	35-11-0	8.00	Roof	✓

Master/Variant

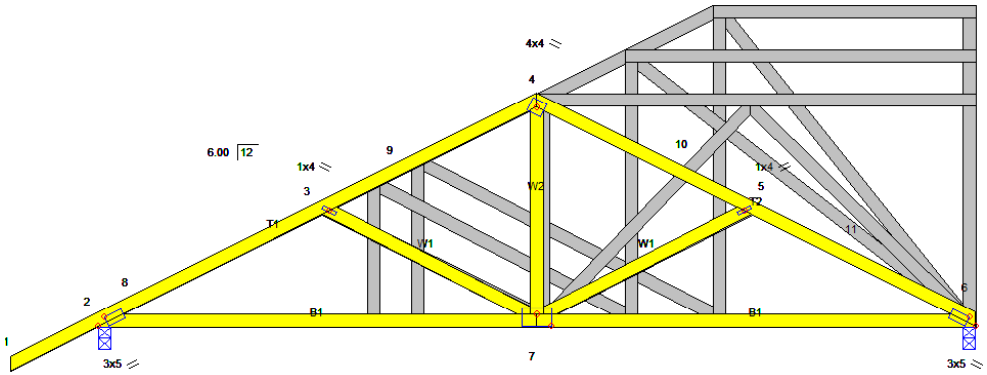
Align Webs and Splices

Right click any truss in a Master/Variant group.

Select **Open Group** from the context menu.



The Master/Variant group will open in the Truss Drawing window.



Master/Variant

Align Webs and Splices (cont)

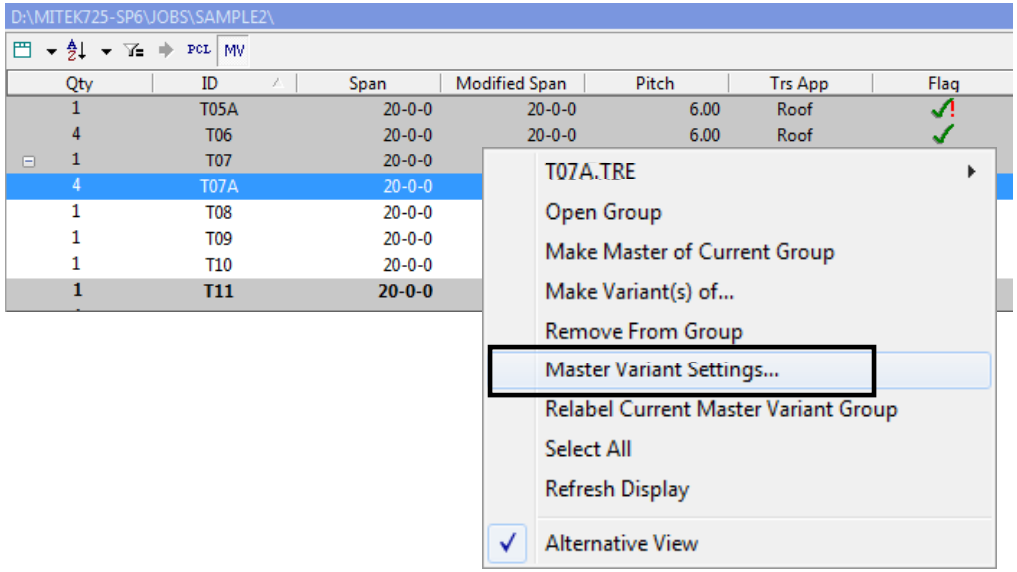
Right click any variant truss in a Master/Variant group.

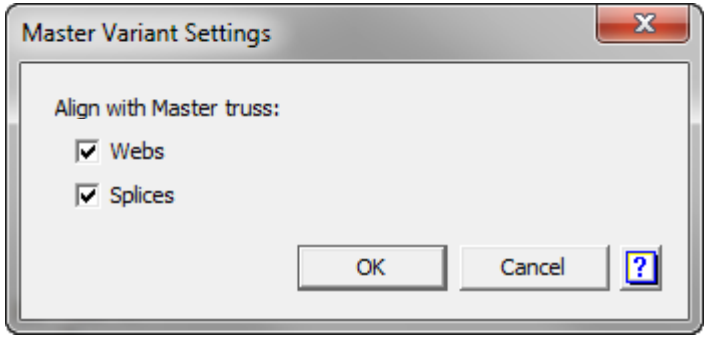
Select **Master Variant Settings…** from the context menu.

The Master Variant Settings dialog will open.

Under **Align with Master truss** select **Webs**, **Splices** or **both**.

Click **OK**





Master/Variant

Align Webs and Splices (cont)

Make sure the Master truss is highlighted.

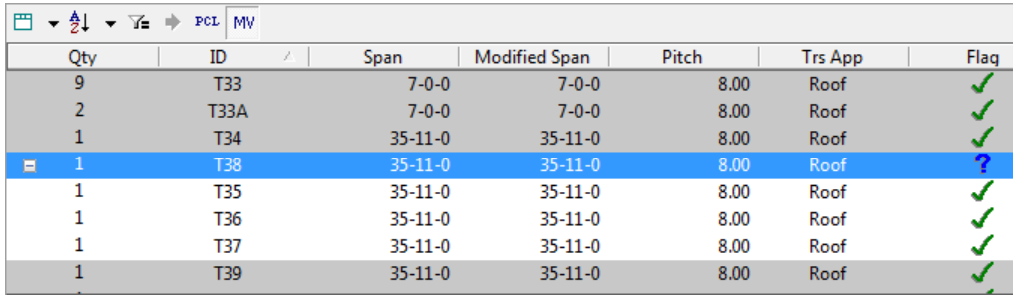
Click **Save**

A window will open for verification of **Master truss has been modified. Update variant truss(es)?**

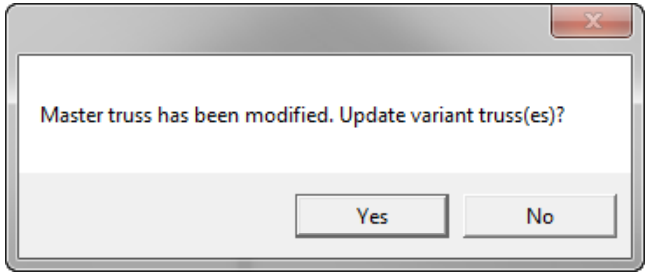
Click **Yes**

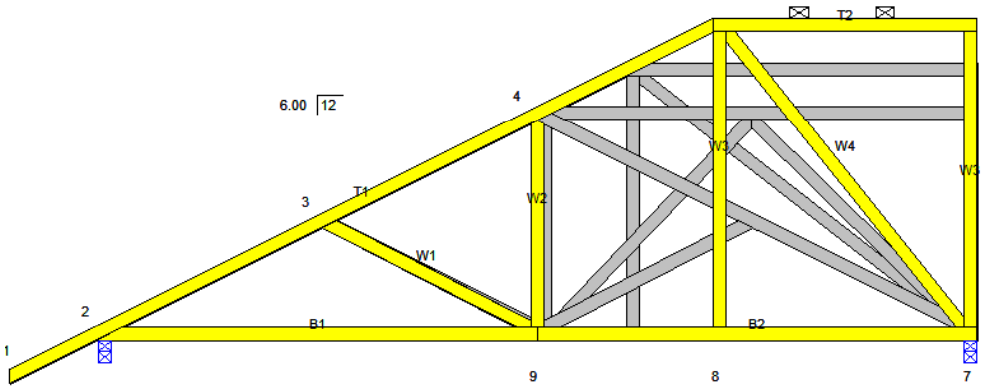
All trusses are now adjusted.

See next page for differences.



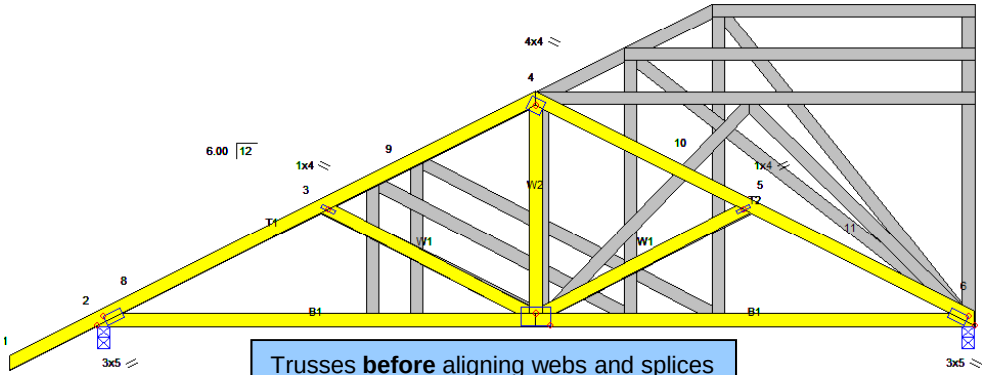
Qty	ID	Span	Modified Span	Pitch	Trs App	Flag
9	T33	7-0-0	7-0-0	8.00	Roof	✓
2	T33A	7-0-0	7-0-0	8.00	Roof	✓
1	T34	35-11-0	35-11-0	8.00	Roof	✓
1	T38	35-11-0	35-11-0	8.00	Roof	?
1	T35	35-11-0	35-11-0	8.00	Roof	✓
1	T36	35-11-0	35-11-0	8.00	Roof	✓
1	T37	35-11-0	35-11-0	8.00	Roof	✓
1	T39	35-11-0	35-11-0	8.00	Roof	✓



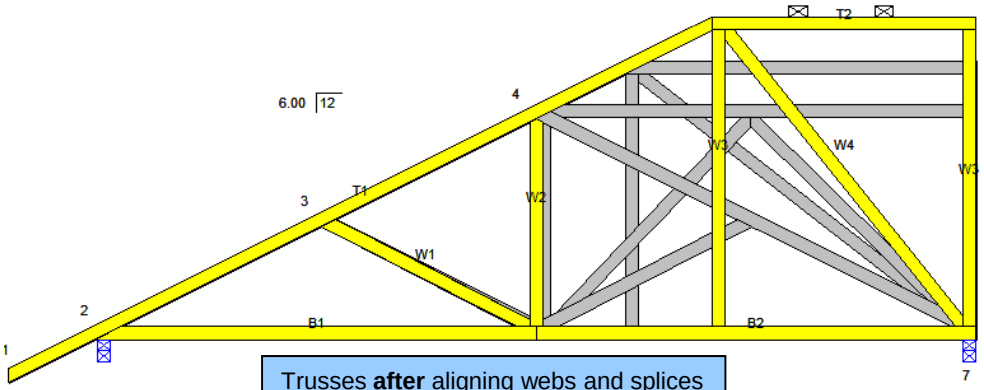


Master/Variant

Align Webs and Splices (cont)



Trusses **before** aligning webs and splices



Trusses **after** aligning webs and splices

Master/Variant

Re-label Members

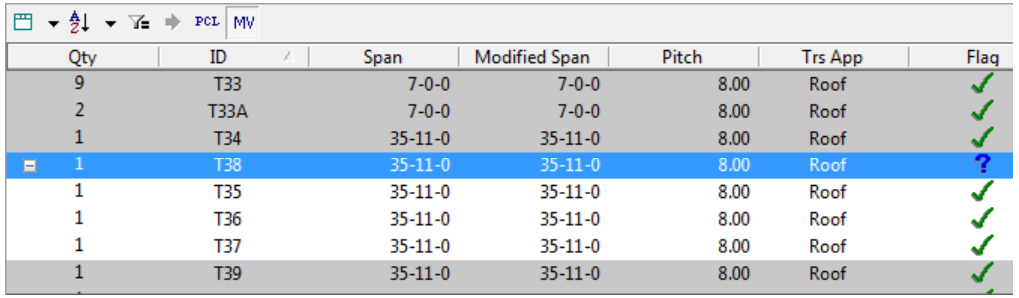
The user may re-label each piece of wood across an entire group of trusses.

To Re-label trusses;

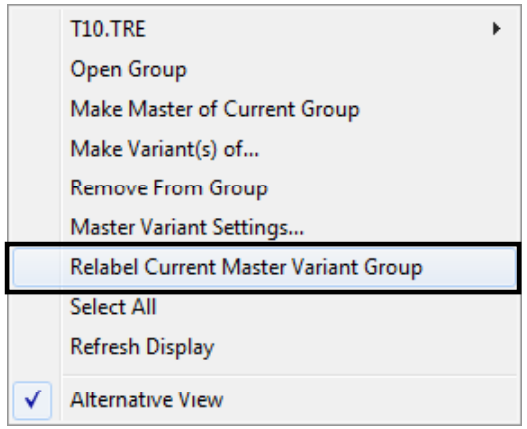
Right click any truss in a group.

Select **Relabel Current Master Variant Group** from the context menu.

All trusses in the group will open, if not already open, and the names of all like members will be changed.

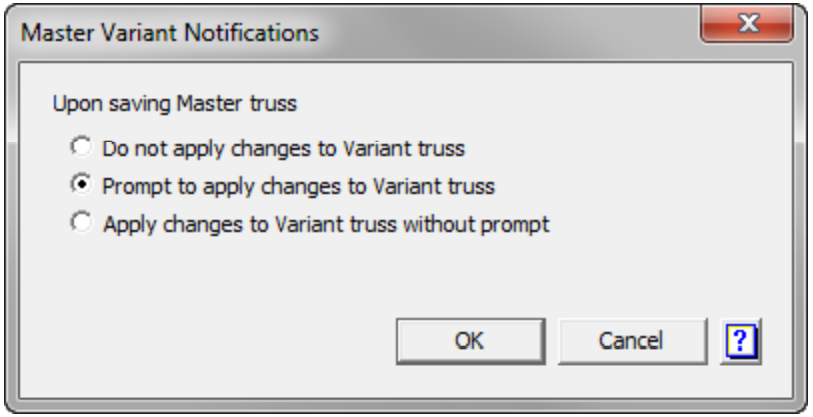


Qty	ID	Span	Modified Span	Pitch	Trs App	Flag
9	T33	7-0-0	7-0-0	8.00	Roof	✓
2	T33A	7-0-0	7-0-0	8.00	Roof	✓
1	T34	35-11-0	35-11-0	8.00	Roof	✓
1	T38	35-11-0	35-11-0	8.00	Roof	?
1	T35	35-11-0	35-11-0	8.00	Roof	✓
1	T36	35-11-0	35-11-0	8.00	Roof	✓
1	T37	35-11-0	35-11-0	8.00	Roof	✓
1	T39	35-11-0	35-11-0	8.00	Roof	✓



Master/Variant

Notifications


Master Variant Notifications
Upon saving Master truss
Do not apply changes to Variant truss
Prompt to apply changes to Variant truss
Apply changes to Variant truss without prompt
OK
Cancel

The Notification option allows the user to pre-set how changes to Variant trusses is handled.

To set Master Variant Notifications:

Click Setup>Manufacturer>Master Variant>Notifications

The options are;

Do not apply changes to Variant truss – Changes will not be made to the Variant truss.

Prompt to apply changes to Variant truss – Will prompt the user before applying changes to the Variant truss.

Apply changes to Variant truss without prompt – Will automatically apply changes to Variant truss with no interaction from the designer.

Tools Defaults

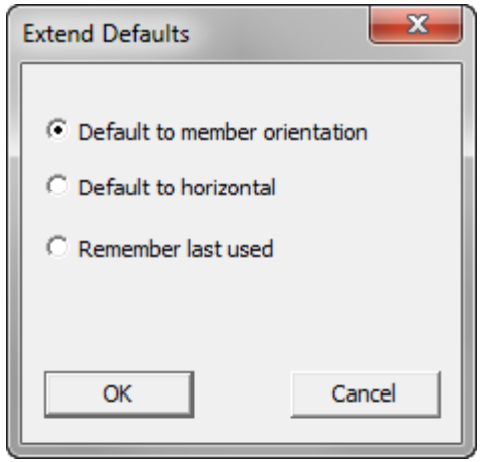
Extend

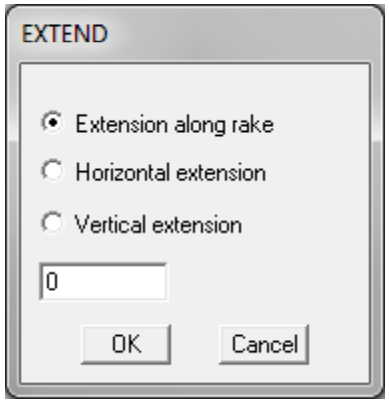
Use these settings to have the **Extend Tool** default to the most used option.

Default to member orientation – Using this option will cause the Extend Tool to default to **Extension along rake.**

Default to Horizontal - Using this option will cause the Extend Tool to default to **Horizontal extension.**

Remember last used – Using this option will cause the **Extend Tool** to default to the last option selected.

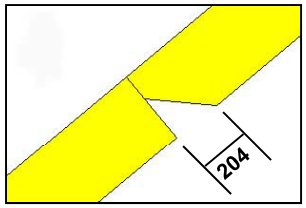




Extend Tool

Tools Defaults

Hinge Plates Defaults



Gap Joint – Gap distance between hinge members

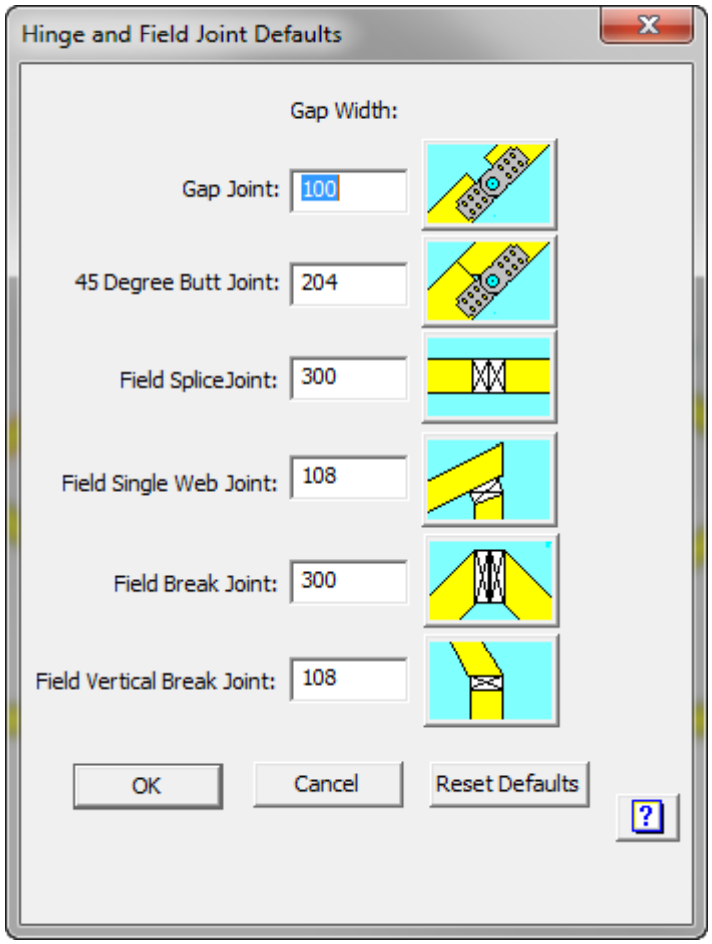
45 Degree Butt Joint – Specifies the gap width required for a 45 degree joint.

Field Splice Joint – Non-hinge opening width dimension of the field splice joint

Field Single Web Joint – Non-hinge gap distance between members

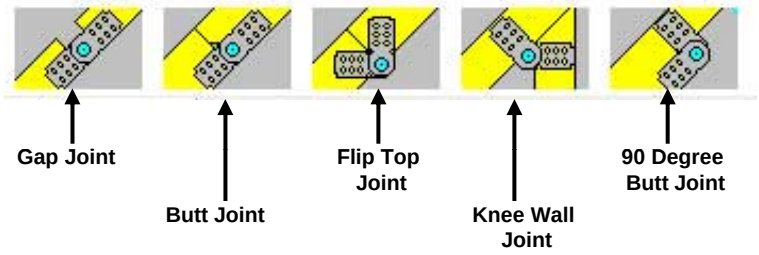
Field Break Joint – Non-hinge gap distance between members

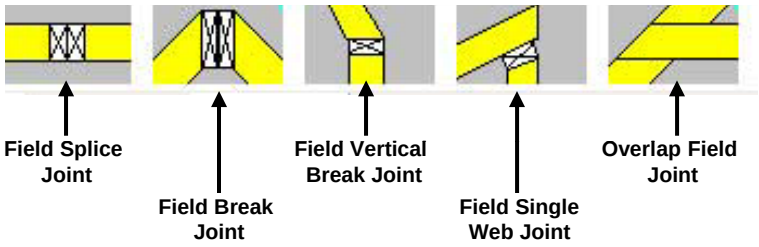
Field Vertical Break Joint - Non-hinge gap distance between members

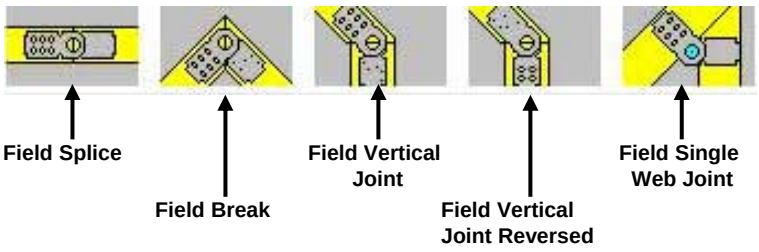


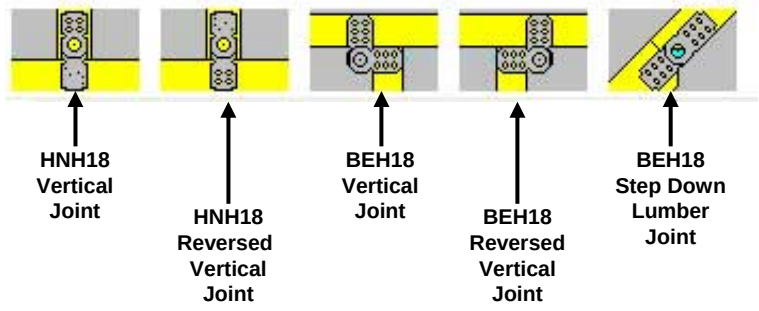
Tools Defaults

Hinge Joint Types



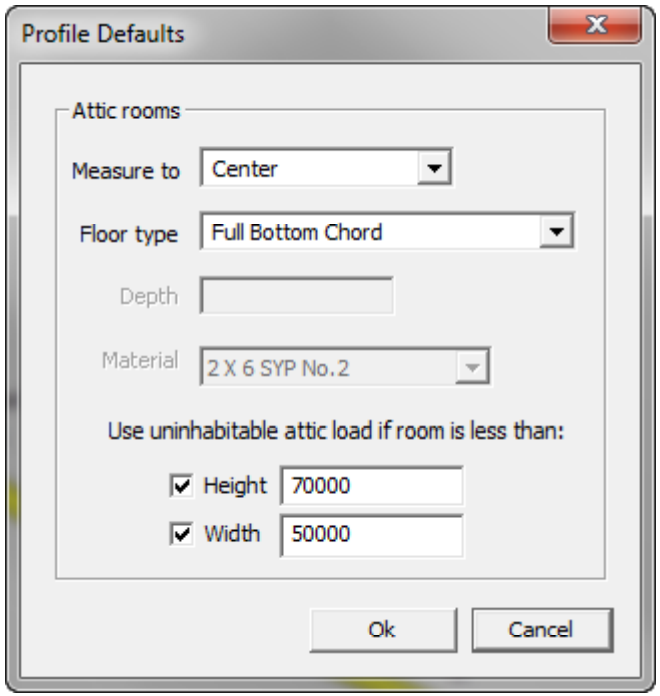






Tools Defaults

Profile



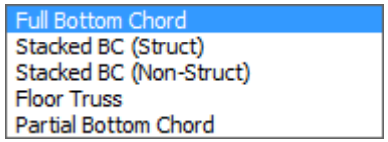
Users may now add **Attic Rooms** to any flat bottom chord truss via the profile tool.

To pre-set Attic Room defaults;

Click **Setup > Manufacturer > Tools Defaults > Profile**

Measure to – Tells where the user is measuring to when positioning the attic room.
Options are **Left Edge**, **Center** or **Right Edge.**

Floor Type – All Floor Types are supported

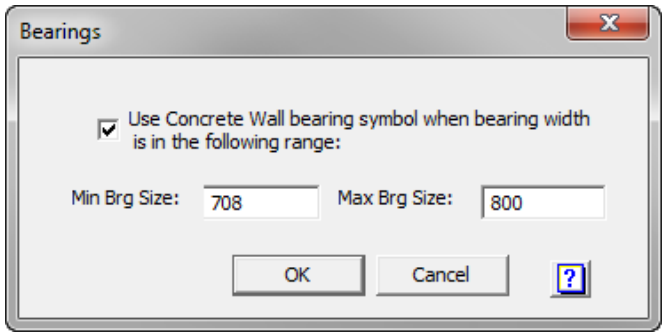


Use uninhabitable attic load if room is less than:
Specify the minimum inhabitable room width of which anything less will receive only light storage loads.

Tools Defaults

Bearings, Copy Job, Double Web

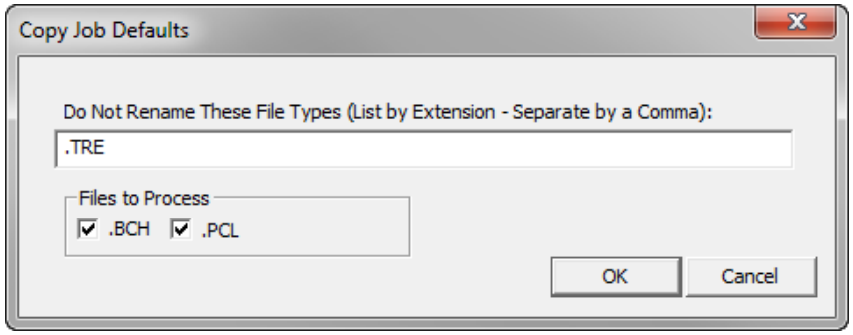
Bearings - Changes the bearing symbol from wood to concrete when the bearing size exceeds the minimum.



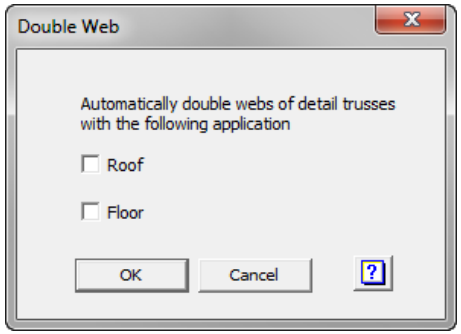
Wood

Concrete

Copy Job – Allows the user to list all job default files that will not be copied when creating a new job. This will also process either **.BCH**, **.PCL** or **both**.

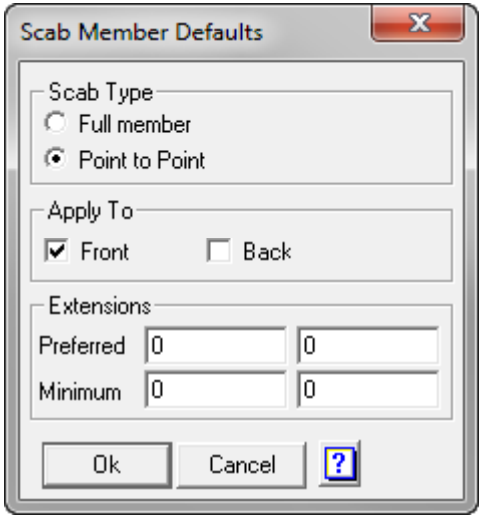


Double Web – Will automatically Double and Triple detail truss webs, Roof and/or Floor, when a web fail. Settings are retained when the program is closed and reopened.



Tools Defaults

Scab Member



Allows the user to pre-set Scab Member defaults. This information may be modified as needed at all three levels, Manufacturer, Job and Truss

Scab Type: Allows the user to set one of two methods for scab placement.

Full member: Places the Scab Member on the entire piece selected.

NOTE: Full Member will not splice a full top chord with a splice. If a full top chord is required, scab the chord and then splice the chord.

Point to Point: Will require the designer to click start and end point of the scab.

NOTE: Selection Points can be end of material, splices, reference lines and joints.

Apply To: Allows the user to specify which face to apply the scab, Front, Back or Both

Extensions: Allows the user to specify how far the scab member will extend beyond the selected point.

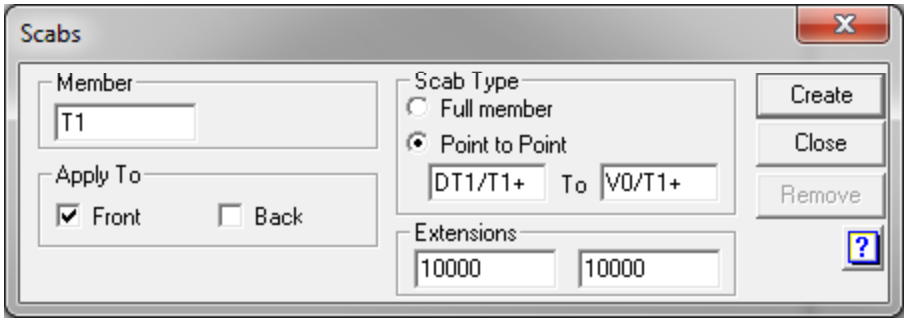
Preferred: this is the first choice for a scab extension and will be displayed when the Scab Tool is activated.

Minimum: The least amount a scab member will extend beyond the selected point. When the scab member is restricted and is shorter than the minimum, no extension will be added.

Tools Defaults

Scab Tool

When the **Scab Tool** is activated, **Apply To**, **Scab Type** and **Extensions** will reflect Manufacturer Defaults discussed on the previous page.

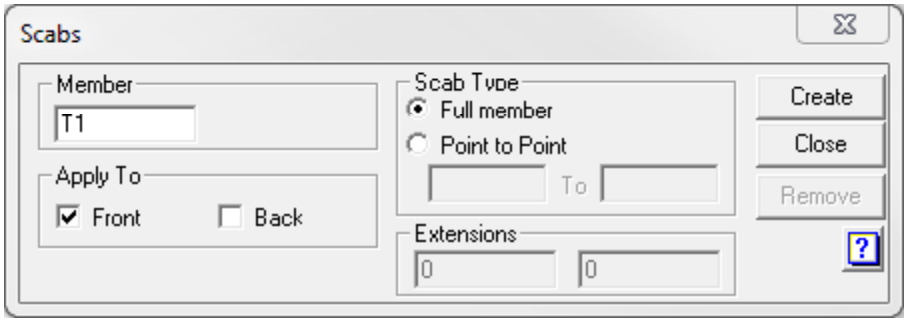


Click the member to be scabbed. The member ID will be added to the Member box.

With Scab Type set to **Point to Point**, click a point at each end of the scab location. The program will add the Versatruss locations to each box.

At this time, any pre-set options may be modified.

With Scab Type set to **Full member**, Point to Point and Extensions are not available.



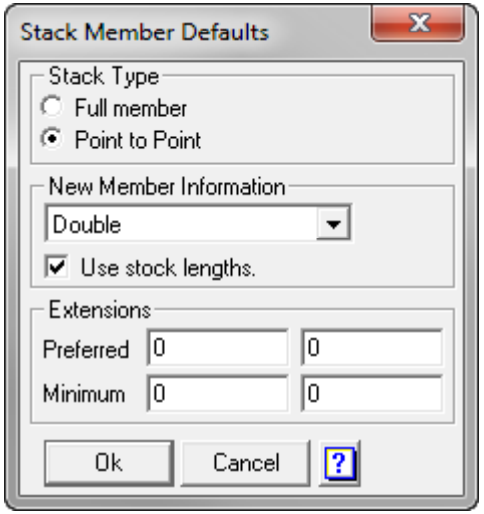
Click the member to scab the entire chord

NOTE: Scab Members may be removed using the Scab Tool or Versatruss

NOTE: Scab Members, by default, will use the same size, grade and species of the member being scabbed

Tools Defaults

Stack Member



Allows the user to pre-set Stack Member defaults. This information may be modified as needed at all three levels, Manufacturer, Job and Truss

Stack Type: Allows the user to set one of two methods for scab placement.

Full member: Places the Stack Member on the entire piece selected.

Point to Point: Will require the designer to click start and end point of the stack member.

NOTE: Selection Points can be end of material, splices, reference lines and joints.

New Member Information: Allows the user to specify a **Double** or **Triple** stack

Use Stock Length: Will cut the stack member to fit but uses a stock length, not actual length, for pricing

Extensions: Allows the user to specify how far the scab member will extend beyond the selected point.

Preferred: this is the first choice for a stack extension and will be displayed when the Stack Tool is activated.

Minimum: The least amount a stack member will extend beyond the selected point. When the stack member is restricted and is shorter than the minimum, no extension will be added.

Tools Defaults

Stack Tool

When the **Stack Tool** is activated, **Scab Type, New Member Information** and **Extensions** will reflect Manufacturer Defaults discussed on the previous page.

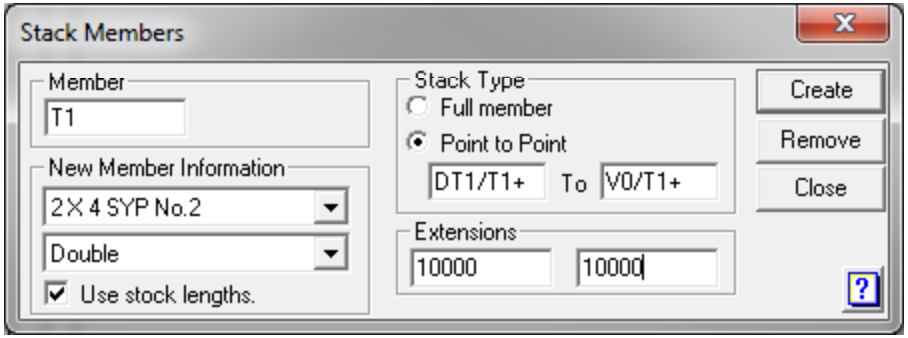
Click the member to be stacked. The member ID will be added to the Member box.

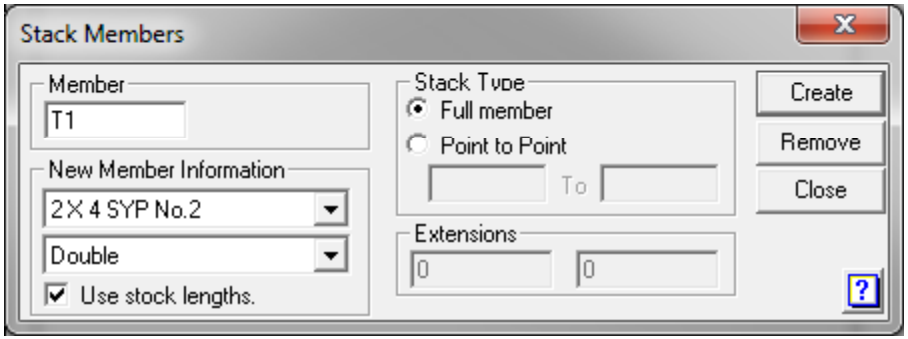
With Stack Type set to Point to Point, Click a point at each end of the stack location. The program will add the Versatruss locations to each box.

At this time, any pre-set options may be modified.

With Stack Type set to Full member, Point to Point and Extensions are not available.

Click the member to stack the entire chord.

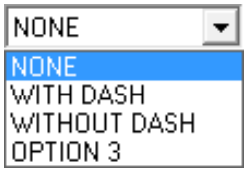




NOTE: Stack Members, by default, will use the same size, grade and species of the member being stacked.

NOTE: Stack Members should only be removed using The Stack Tool. When removing a Stack Member using Versatruss, the designer will have to manually re-adjust any webs raised by the Stack Member Tool

Misc



Omni Type: This pull down offers three different options for creating Omni Saw files. See your saw documentation for more information

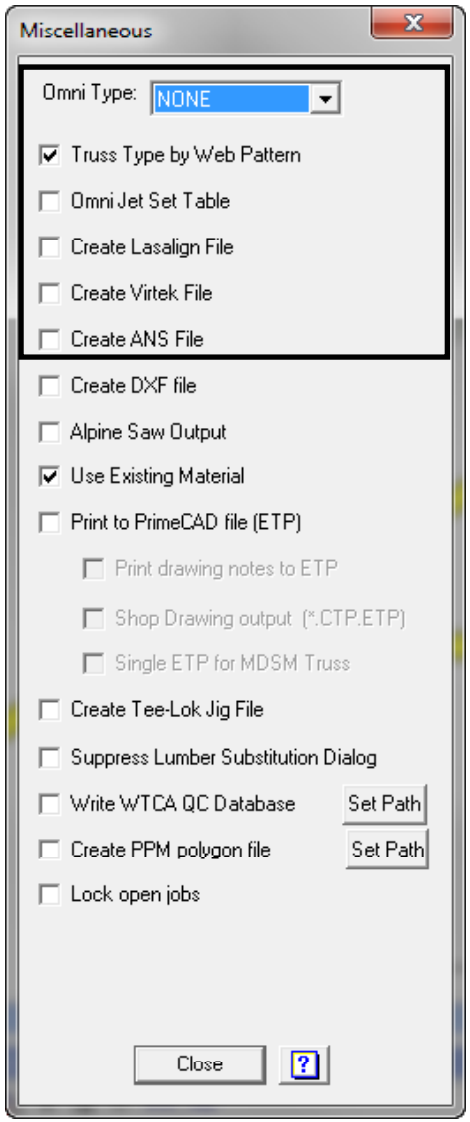
Truss Type by Web Pattern: When checked, trusses will be identified, on output, by their web pattern. By selecting this option, the program uses the truss name from the **Truss Type** section of the **Basics** screen. For instance, if a Howe type truss is selected, it will be identified as such—versus being identified as simply a Roof Truss.

Omni Jet Set Table: This option, when checked, causes the program to create a file that is compatible with the Omni Jet Set® Table.

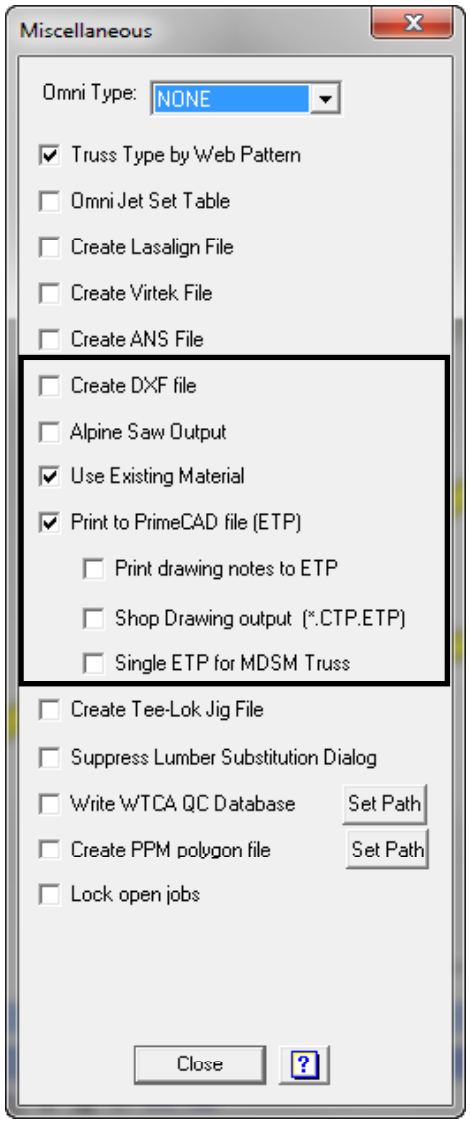
Create Lasalign File: This option, when checked, causes the program to create a file that is compatible with the Lacey-Harmer Lasalign® laser projection system.

Create Virtek File: This option, when checked, causes the program to create the .tps files that are compatible with Virtek Trussline® laser projection system

Create ANS File: This option, when checked, causes the program to create a file that contains all engineering information relevant to the active truss. This file is named , .ANS, and is located in the same directory as the truss itself. The .ANS file is viewable through the **Answer File Viewer**.



Misc (cont)



Create DXF File: This option, when checked, causes the program to create an image file that is compatible with PrimeCAD® and other CAD programs. This file is named, .DXF, and is located in the same directory as the truss itself

Alpine Saw Output: This option, when checked, causes the program to create a file that is compatible with Alpine® computerized saws.

Use Existing Material: When this option is checked, the program retains any lumber changes you've made on a truss on a re-analysis. You can still analyze a truss without those changes by selecting **Analyze/Redesign.**

Print to PrimeCAD file: This option generates an ETP (**E**ngineering **T**o **P**rimecad) file that can be read by the PrimeCAD® program. The .ETP format can be read ONLY by the PrimeCAD® program; it cannot be imported into any other CAD program.

Print Drawing Notes to ETP: This option will transfer the drawing notes in the ETP file. Drawing notes are created by clicking EDIT-DRAWING NOTES and are visible in the truss area. If this option is not checked, the drawing notes will not be visible on the ETP.

Shop Drawing Output: This option will take the cutting output (shop drawing) and create an ETP file.

Single ETP for MDSM Truss: This option will create a single ETP file for MDSM (**M**ultiple **D**esign **S**ingle **M**anufacture) truss, What this means is, every truss with the same base span, slope and peak location will be included in the single ETP file.

Misc (cont)

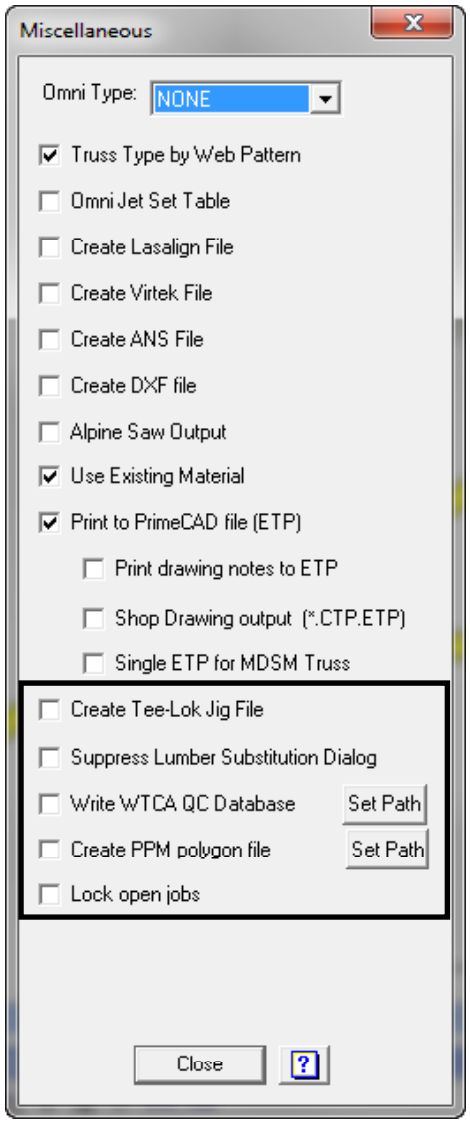
Create TeeLok Jig File: This option will create a .jig file from MiTek Engineering. The jig file can then be used in Tee-Loks' Tee-Solve program.

Suppress Lumber Substitution Dialog: Checking this option will suppress all lumber warning screens when opening a job or launching the engineering program. This is a good option to have checked on if jobs are shared between design offices that have a different lumber inventory.

Write WTCA QC Database: This option defines the path where the WTCA QC text file will be saved to. The user can select the location where the file will be saved by clicking on the Set Path button

Create PPM polygon file: This option creates an XML file that contains the PPM (Plate Placement Method) information. The user can select the location where the file will be saved by clicking on the Set Path button

Lock open jobs: Checking this option will lock the current opened job on a user's machine. This will prevent another user from opening the same job and making changes.

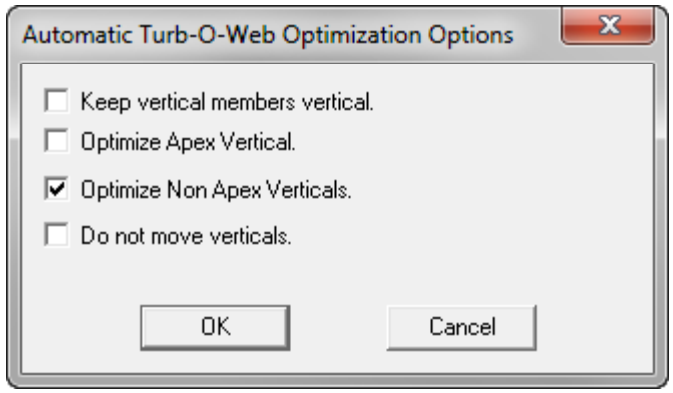


Turb-O-Web

Optimization Options

From **Setup > Manufacturer > Turb-O-Web Optimization options**

Items in this dialog window allow the user to specify how the program will optimize Turb-O-Webs.



Keep vertical members vertical – Does not allow the program to angle vertical webs during optimization,

Optimize Apex Vertical – Allows the program to optimize the vertical under the peak of the truss.

Optimize Non Apex Verticals – Allows the program to optimize all verticals but not the apex vertical.

Do not move verticals – Locks all verticals at their present location during optimization.

Gable Stud / Filler Ply Defaults

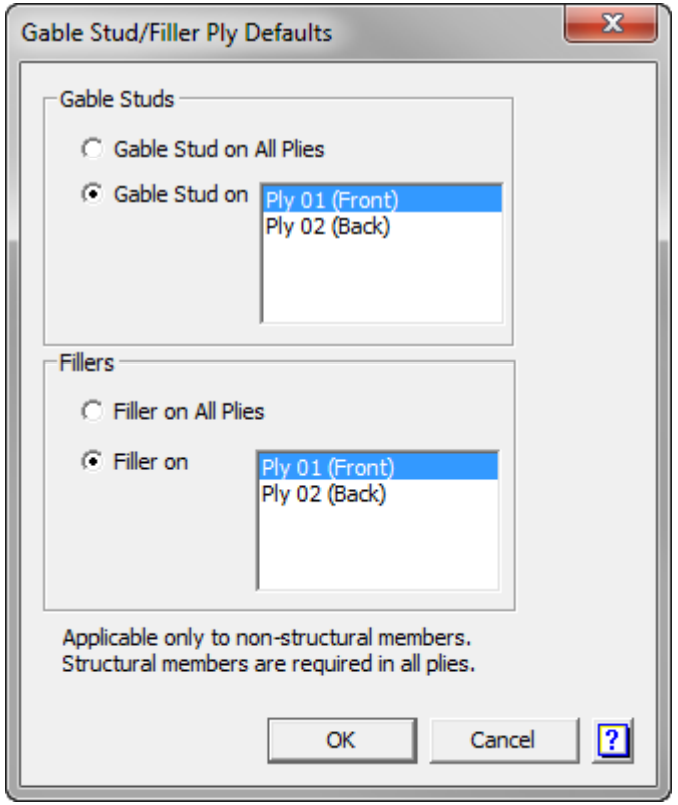
Setup>Manufacturer>Gable Stud/Filler Ply Defaults:

Gable Studs:

- **Gable Stud on All Plies -** Will stud all plies of a multi-ply gable
- **Gable Stud on –** Will only add studs to the specified ply, Front or Back

Fillers:

- **Fillers on All Plies -** Will add fillers to all plies of a multi-ply Scissor, Vault or Cathedral truss
- **Fillers on –** Will only add fillers to the specified ply , Front or Back



NOTE: Applicable only on non-structural members. Structural members are required in all plies